

Supreme Court, U. S.  
FILED  
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IN THE  
**Supreme Court of the United States**  
OCTOBER TERM, 1975

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No. **75-1425**

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NORTHERN HELEX COMPANY, *Petitioner,*  
v.

UNITED STATES OF AMERICA, *Respondent.*

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**APPENDIX TO PETITION  
FOR A WRIT OF CERTIORARI TO THE  
UNITED STATES COURT OF CLAIMS**

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## IN THE UNITED STATES COURT OF CLAIMS

No. 454-70

(Decided October 22, 1975)

## NORTHERN HELEX COMPANY V. THE UNITED STATES

*Clarence T. Kipps, Jr.*, attorney of record for plaintiff.  
*F. V. Roach, Ralph P. Blodgett, Jim W. Krueger, Dean W. Wallace, Edward J. Vandermark, John Lloyd Rice* and  
*Miller & Chevalier*, of counsel.

*Edward J. Friedlander* with whom was *Assistant Attorney General Rex E. Lee, James F. Merow*, of counsel.

Before COWEN, *Chief Judge*, DURFEE, *Senior Judge*,  
 SKELTON, NICHOLS, and KUNZIG, *Judges*.

## OPINION

SKELTON, *Judge*, delivered the opinion of the court:

In this case Northern Helex Company (plaintiff or Northern Helex) seeks in its second amended petition to recover \$99,964,000 from the Government as damages for a breach of contract to purchase helium. The plaintiff is a wholly owned subsidiary of Northern Natural Gas Company (Northern). The liability issue in the case was decided in favor of the plaintiff by this court in *Northern Helex Co. v. United States*, 197 Ct. Cl. 118, 455 F. 2d 546 (1972). In that decision we held that the failure of the Government to pay for helium delivered to it by the plaintiff as required by the contract was a material breach that justified the plaintiff in terminating the contract and for which the plaintiff has a claim for damages. We held further that the

plaintiff had not waived the breach of the Government by its continued production and tender of helium to the Government both before and after suit was filed. However, we did not pass upon plaintiff's claim for damages nor upon other issues in the case that will be discussed below. We granted plaintiff's motion for summary judgment on liability and remanded the case to the trial judge to determine the amount of recovery, if any. A trial was held on this issue, which resulted in findings of fact and a recommended decision by the trial judge in favor of the plaintiff for the recovery of \$78,012,142 as damages from the Government.<sup>1</sup> Both the plaintiff and the defendant excepted to the trial judge's report. The facts necessary for our decision are included in this opinion. Our task is to decide the issues left undecided in our prior opinion cited above. Most of the basic facts are set forth in that opinion, and, for the sake of clarity and continuity, are repeated below with certain omissions and additions.

The plaintiff, a wholly owned subsidiary of Northern Natural Gas Company, made a contract with the United States, acting through the Department of Interior, on August 15, 1961. This agreement was authorized by the Helium Act Amendments of 1960 (50 U.S.C. § 167, et seq.), a long-range program designed to conserve helium as a natural resource for future use. A by-product of the production of natural gas, helium was wasted daily as it escaped into the atmosphere at such a rate that the helium-bearing gas resources in the southwestern states were expected to be inadequate for national needs by 1980-1985. Because of the unique properties of helium and the slim likelihood of finding new sources as rich as the Hugoton Area, involved here, the helium conservation program was initiated. One of its components was plaintiff's contract.

<sup>1</sup> The findings of fact and recommended decision of Trial Judge Louis Spector have been helpful, but we reach a somewhat different result.

This provided for the purchase by the United States of the helium to be produced by Northern Helix which was estimated to be 13.5 billion cubic feet over a span of years. The helium was to be extracted from Hugoton gas, delivered, and paid for each month over the 22-year contract period with an annual fiscal year limitation of \$9.5 million. The unit price of \$11.24 per thousand cubic feet had increased to \$12.41 by the date this action was filed (in December 1970) due to automatic price adjustments envisaged by the agreement. The Government also entered into similar contracts with Cities Service Helix, National Helium Corporation, and Phillips Petroleum Company. Pursuant to its contract, Northern Helix constructed facilities, extracted, and delivered helium from December 7, 1962, onward.

The helium conservation program was intended to be self-liquidating, financed with borrowing authority provided by Congress and with funds lent by the Treasury Department to Interior. The borrowed funds were to be supplemented and, within 25 to 35 years, repaid with interest from helium sales proceeds. Interior was to sell some of the helium at a price high enough to pay for the entire program and still have 40-50 billion cubic feet in storage for use after 1983. The "federal market"—consisting of Government agencies, their prime contractors and subcontractors—was expected to purchase its major helium requirements from Interior and provide the basic financing for the whole program.

Unfortunately this forecast did not prove itself. The difficulty was that, from the mid-1960's, private helium plants began to operate outside the program and to sell to Government contractors. Also, other conservation contractors produced helium in excess of the amount which could be sold to Interior under their contracts and sold the excess in competition with Interior at lower prices. Northern Helix sold helium only to Interior, but over the period of 1965-

1969, some \$25 million (it is said) was lost to the program because helium was purchased for federal use from other private producers rather than the Bureau of Mines. Congress did not appropriate enough funds to satisfy the payments due under the agreements of Northern Helix and its companions in the program. By letter dated November 26, 1968, Interior informed plaintiff that the Government would be unable to make payments when they became due as of January 1969. Beginning in December 1968, and continuing through 1969 the Government failed to pay the complete amount owed. Arrearages in the monthly payments ranged from a low of \$664,122 to a high of \$3,235,349. For deliveries from November 1969 through November 1970, the Government paid nothing at all.

In May 1970, the Interior Department convened a meeting of the four conservation contractors in which they were told that the unit price and the maximum annual payment would have to be negotiated downward. A letter of June 24, 1970 (acknowledged June 26), from Northern Helix notified the Government that its failure to make payments was a material breach which was not being waived, but that Northern Helix was willing to discuss modifications. A draft agreement which would have increased the obligations of plaintiff while the payments to it were decreased was circulated along the lines discussed in the negotiations. Meanwhile, in his request for supplemental appropriations for fiscal year 1971, the President asked only \$56,100,000 in borrowing authority for obligations under the helium contracts. This amount was not sufficient to pay outstanding debts and all anticipated deliveries for the remainder of the fiscal year but only to cover five months of operation at the present contract price and seven months at the reduced price proposed by Interior. No real progress was made during the negotiations, as Northern Helix delivered 657,008,000 cubic feet of helium from November 1, 1969, through November 30, 1970, plus an additional 44,647,000



through December 24, 1970, the date of filing of the petition in this court, without receiving any payment.

In its petition, plaintiff alleged that although its contractual obligation to perform had been discharged by the Government's material breaches of contract, it would continue to tender helium to the Government in mitigation of damages and in the interest of conservation. This was done, according to Northern Helex, because helium extraction facilities have been interrelated with its liquefied petroleum gas and petrochemical operations in such a way that the helium facilities must be continued in operation whether helium is wasted or stored. Northern Helex has no facilities for storage, purification, distribution, or marketing of helium and there is so little demand for the gas in the private market that the company has not considered it financially feasible to develop such facilities. On December 30, 1970, Northern Helex notified Interior of this suit and of its decision to continue to deliver helium, despite the material breach, because of the integration of its facilities and the need to save helium.

On January 14, 1971, the United States sent Northern Helex a check for \$8,671,631.99—the total amount then due for all helium delivered by plaintiff—which the company cashed, without any notation on the check, and it then amended its petition to reflect payment as a reduction of damages. On January 26, 1971, the Under Secretary of Interior wrote plaintiff terminating the contract under its termination clause, effective March 28, 1971. Plaintiff does not acknowledge the legitimacy of this asserted termination. Since then, a "no prejudice agreement" has been entered into under which Interior agrees to store helium which Northern Helex has continued to deliver. Payment also continued. Northern Helex billed Interior for helium delivered through March 31, 1971. The bills carry a legend indicating that delivery, submission of documents, and payment shall be without prejudice to the rights of the parties. After the recent Congressional appropriation of funds, on

June 23, 1971, Northern Helex received a check of \$2,285,872.87 for the period of December 1970 through March 28, 1971. This June payment is also considered by Northern Helex to be a reduction of damages without prejudice to its rights.

The parties stipulated that had the contract remained in effect from December 24, 1970, through August 15, 1983, the plaintiff would have delivered 6,467,000,000 cubic feet of helium to the Government. The trial judge found that at the contract price of \$12.41 per m.c.f. in effect when the contract was terminated on December 24, 1970, the Government would have paid the plaintiff the sum of \$80,255,000 for such helium.

The parties stipulated further that had the contract remained in effect to the end of the contract period, plaintiff's costs in performing the contract would have amounted to the sum of \$43,067,413.<sup>2</sup>

The plaintiff contends that it is entitled to recover as common law damages for the breach the full contract price of \$80,255,000, adjusted upward according to the wholesale price index, without any reduction for its costs of operation (\$43,093,793) in performing the contract. The basis for this contention is that plaintiff's helium extraction plant is a part of an integrated operation involving itself, which owns and operates the helium extraction plant, and the following additional companies and their operations: Northern Natural Gas Company (Northern), which owns the natural gas and also owns and operates a natural gas pipeline and transmission system; Northern Gas Products Company (Gas Products), which owns and operates ethane and liquefied gas products facilities; and Northern Petro-

<sup>2</sup> Excludes consideration of potential liability for Landowners/Producers claims; excludes any adjustment for inflation (stated in 1971 dollars); and excludes interest for money borrowed or to be borrowed by plaintiff.

chemical Company (Petrochemical), which owns and operates petrochemical facilities. Northern is the parent company and all of the other companies are its wholly owned subsidiaries. The integration relied on by the plaintiff consists of the following operations. Northern supplies the natural gas from its pipelines to the plant of Gas Products in Bushton, Kansas, which extracts propane, ethane, and heavier liquids from the gas. The helium plant of plaintiff at Bushton extracts helium and nitrogen from the gas and returns the gas to Northern for sale to fuel customers, while a low B.T.U. nitrogen-methane mixture is piped to Gas Products for burning the methane as fuel, and for rejection of the nitrogen by venting it into the air. Petrochemical's plant is located in Joliet, Illinois, but is connected with the Bushton, Kansas complex by a pipeline from which it receives Bushton feedstocks and especially the high purity ethane for which it was designed and on which it depends. The Petrochemical complex consists of an ethylene oxide—ethylene glycol plant, an olefins plant, and a low density polyethylene plant. The plaintiff alleges that Northern, through its wholly owned subsidiaries mentioned above, has an investment of 300 million dollars in all of these plants. These companies allegedly have interlocking agreements or understandings providing for the furnishing of services and products to each other. The plaintiff says that it cannot stop operating its helium plant because it is obligated by contract with Northern to process up to 500,000,000 cubic feet of Northern's gas per day for the extraction of helium-gas mixture for 22 years (to 1983), and because it is necessary for plaintiff's helium plant to extract a nitrogen-methane mixture from the gas so that Gas Products can reject the nitrogen and burn the methane as fuel. The contract between the plaintiff and Northern is in evidence and only requires the plaintiff to extract helium. Nitrogen extraction is not mentioned. There is no showing how or why the plaintiff is obligated to extract nitrogen for the benefit of Gas Products and Petrochemical and their operations.

The plaintiff contends that the pre-contract discussions by the parties about integration of helium, nitrogen removal, liquid propane gas (LPG), and petrochemical facilities show that the necessity for Northern Helex to continue operation of the helium facilities to the end of the contract period in the event of a breach (or termination) by the Government was not only reasonably foreseeable by the Government, but was expressly recognized before and during the negotiation of the contract, as well as in the terms of the contract. By reason of these facts, plaintiff claims that it is entitled to recover its cost of operation to August 15, 1983, along with its profit, which together equal the full contract price. We do not agree. Neither the facts in this case nor the law applicable thereto obligates or requires the Government to pay the costs of plaintiff's performance from the date of the breach to the end of the contract term.

There was no privity of contract between the Government and Northern, or Gas Products, or Petrochemical. The Government had nothing whatsoever to do with the operations of those companies nor with their obligations with or to each other. There was no obligation on the part of the Government to remove helium and nitrogen from the gas so that Northern could have gas of pure quality to sell to fuel customers. Neither was the Government obligated to remove nitrogen from the gas so that Gas Products could reject it, nor was the Government concerned or involved in any way with the extraction of propane, ethane, LPG and other hydrocarbons from the gas by Gas Products. There was no obligation on the part of the Government to see that high purity ethane was furnished by Gas Products to Petrochemical in Joliet, Illinois. The plaintiff has shown no connection whatever between the Government and these companies and their operations.

The only contract that the Government had was with Northern Helex for the purchase of helium. No other product is mentioned in the contract. This was a fixed fee contract. The Government had no interest in nor obligation



with respect to plaintiff's costs in performing the contract either before or after termination. Performance costs were the sole responsibility of the plaintiff as the seller of the helium and the Government as the buyer had no liability with respect to them.

The Government is even further removed from liability for the so-called "integrated costs" of plaintiff resulting from the integrated operations of plaintiff with Northern, Gas Products and Petrochemical, because the contract between plaintiff and the Government provided:

#### ARTICLE XXXI. GENERAL

\* \* \* \* \*

31.3 In connection with Seller's plant, Seller at its sole risk, cost and option may construct and operate, or cause to be constructed and operated, facilities for extracting products other than helium from the natural gas processed through said helium plant.

This clause completely exculpates and exonerates the Government from the *cost* of operation of any "facilities for extracting products other than helium from the natural gas processed through said helium plant" constructed and operated by plaintiff. The only facility constructed and operated for such purpose by plaintiff was that part of its helium extraction plant that extracted nitrogen which it furnished to Gas Products. The above clause relieves the Government of any liability for the cost of extracting nitrogen from the gas by plaintiff. None of the remaining integrated facilities for the extraction of ethane, propane, LPG, petrochemicals, etc., from the gas were constructed or operated by the plaintiff but by Northern, Gas Products, and Petrochemical with which the Government had no privity of contract. Since the above clause in the contract protects the Government from liability for the cost of operation of any such facility constructed and operated by the plaintiff, no liability can be imposed on the Government for

the cost of operation of any part of the facilities constructed by plaintiff's parent and sister companies to which the Government owes no contractual obligation. Even if the plaintiff "caused to be constructed and operated" the plants of Northern, Gas Products, and Petrochemical, the above contract clause protects the Government from liability for their operation costs, because this contingency is covered.

The basic rule for awarding common law damages for a breach of contract is stated as follows in RESTATEMENT OF LAW, Contracts § 329, comment a at 504:

In awarding compensatory damages, the effort is made to put the injured party in as good a position as that in which he would have been put by full performance of the contract, at the least cost to the defendant and without charging him with harms that he had no sufficient reason to foresee when he made the contract. \* \* \*<sup>3</sup>

See also subsidiary rule section 335 [Id.] :

If the defendant's breach of contract saves expense to the plaintiff by discharging his duty of rendering a performance in return or by excusing him from the performance of a condition precedent, the amount of this saving is deducted from the damages that would otherwise be recoverable.

See also 5 CORBIN, CONTRACTS §§ 1038, 1053, 11 WILLISTON, CONTRACTS, § 1353, (3d ed. 1968).

<sup>3</sup> The court has qualified or clarified this rule by noting that plaintiff is to be placed "in as good a position *pecuniarily* as [it] would have been if the contract had been completely performed." *J. D. Hedin Constr. Co. v. United States*, 197 Ct. Cl. 782, 803, 456 F. 2d 1315, 1327-28 (1972). [Emphasis supplied.] *G. L. Christian & Associates v. United States*, 160 Ct. Cl. 1, 312 F. 2d 418, cert. denied, 375 U.S. 954 (1963).

The plaintiff argues that the above rule (section 329) when properly applied to the facts of this case entitles it to recover its costs for performance of the contract to the end of the contract term. The basis for this argument, as pointed out above, is that by reason of the pre-contract discussions and negotiations between the parties, it was contemplated that the plaintiff would build and operate an integrated plant that would extract nitrogen, ethane, propane, LPG, other hydrocarbons, and petrochemicals, in addition to the helium to be sold to the Government, and that the Government agreed to and encouraged such a plan. The plaintiff contends that by reason of these facts, the Government had sufficient reasons to foresee the harm that would result to the plaintiff if the Government breached or terminated the contract, and that this imposed an obligation on the Government to pay the cost of plaintiff's performance to the end of the contract term if the Government breached the contract. We do not agree, because the facts do not support the theory of the plaintiff, as will be shown below.

The facts show that Northern was planning as a commercial undertaking the integrated operation (that was finally constructed and operated) as early as 1957. At or about this time it had architects and engineers to draw up plans for such an enterprise. These were abandoned when it began negotiations with the Government. However, on October 28, 1960, Northern entered into a contract with Gas Products whereby the latter company would construct and operate a plant at Bushton, Kansas, to extract and remove various hydrocarbons from natural gas to be supplied by Northern. The contract period was 20 years. This contract was made almost a year before the contract was executed between the plaintiff and the Government on August 15, 1961. Consequently, the contract with Gas Products could not have been foreseen nor contemplated by the Government when its contract was executed with the plaintiff, because the Gas Products contract had been in force

for almost a year. Furthermore, the Gas Products contract was amended on June 26, 1967, almost six years after the contract with plaintiff involved here was executed. Such amendment provided that at that time ethane was not being extracted from the gas by Gas Products, but that it was proposed to be so extracted by 1969 and be in full production by the end of 1974. These activities were to take place eight and 13 years after the contract between the plaintiff and the Government was executed on August 15, 1961. The Government could not have foreseen that these events would occur after so long a time. It should be kept in mind that the Gas Products plant is the central part of plaintiff's alleged integrated operations. It receives the nitrogen from plaintiff's extraction plant which it rejects. It extracts ethane, propane, LPG, and other hydrocarbons from Northern's gas. Furthermore, it supplies Petrochemical with pure ethane, from which the latter company extracts the petrochemicals mentioned above. To hold the Government responsible for costs that support such operations approaches speculation which we cannot approve. As pointed out above, we do not know how or why the plaintiff is obligated to supply nitrogen to Gas Products, nor how or why Gas Products is required to supply pure ethane to Petrochemical. The Government could not possibly have foreseen these activities nor assumed any liability with reference thereto, because, among other reasons, even now the facts regarding them are unknown to the Government. There is no evidence whatever that the parties contemplated at the time the contract was signed that the Government assumed any liability or responsibility for the alleged integrated operations, nor that the Government would be liable for the cost of plaintiff's performance in case the contract was terminated. The evidence, including the contract, point the other way and negate any such understanding or assumption. The Supreme Court said in *Globe Refining Co. v. Landa Cotton Oil Co.*, 190 U.S. 540, 544 (1903):



\* \* \* If a contract is broken the measure of damages generally is the same, whatever the cause of the breach. We have to consider therefore what the plaintiff would have been entitled to recover in that case, and *that depends on what liability the defendant fairly may be supposed to have assumed consciously, or to have warranted the plaintiff reasonably to suppose that it assumed, when the contract was made.*

This point of view is taken by implication in the rule that *"a person can only be held to be responsible for such consequences as may be reasonably supposed to be in the contemplation of the parties at the time of making the contract."* \* \* \* *The consequences must be contemplated at the time of the making of the contract.* [Emphasis supplied.]

Plaintiff's claim for its performance costs appears to be an afterthought that was developed by it after the breach by the Government.

Furthermore, during the pre-contract discussions, the Government did not request or require the plaintiff to exhibit its plans nor to reveal its cost, because the Government was not concerned with such facts. All the Government wanted to do was to buy helium at a fixed fee and the extent and cost of plaintiff's plant and its operation was its own business that did not concern the Government.

Regardless of the pre-contract discussions and negotiations between the parties, under well settled principles of contract law, for which citation is unnecessary, all such discussions and negotiations merged into the executed contract. As has been stated, the contract does not impose any obligation on the Government to pay plaintiff's costs of performing the contract to the end of the term, nor any obligation whatever to pay any costs with reference to plaintiff's integrated operations with its parent and sister companies. As stated above, the contract absolves the Gov-

ernment from liability for any costs of plaintiff's integrated operations. Furthermore, with reference to the alleged pre-contract discussions and negotiations, the contract provides:

#### ARTICLE XXXI. GENERAL

31.2 The terms of this contract express and constitute the full agreement between the parties thereto. There are no warranties, covenants, stipulations, or conditions existing apart from the terms of this contract.

Accordingly, we hold that the plaintiff is not entitled to recover its cost of performance (\$43,093,793) of the contract to the end of the contract period, and that its claim for the full contract price of \$80,255,000, escalated, without any reduction for costs of performance is denied.

The defendant has alleged what it calls an affirmative defense to plaintiff's claim for damages. We declined to decide this question in our previous decision (197 Ct. Cl. 118), but must do so in this opinion. This affirmative defense consists of the following set of facts. Notwithstanding plaintiff's termination of the contract on December 24, 1970, because of defendant's breach for non-payment as required by the contract, the defendant treated the contract as still valid until January 26, 1971, when Under Secretary of the Interior Russell sent plaintiff a notice terminating the contract as of March 28, 1971, under paragraph XII of the contract. The plaintiff challenges both statements and says that neither condition existed. The plaintiff says furthermore that the decision to terminate was not that of the Under Secretary as required by the contract but that of the Office of Management and Budget; and that in any event the Under Secretary had not complied with the National Environmental Policy Act of 1970 (42 U.S.C. § 4321, *et seq.*) by filing an environmental impact statement dealing with the termination; and, finally, that

the contract had already been terminated by the plaintiff on December 24, 1970, by reason of defendant's breach; and that for all these reasons the attempted termination by Under Secretary Russell was ineffective. We hold that the last stated argument of the plaintiff is the correct one and that since the contract had been terminated by the plaintiff on December 24, 1970, there was nothing for the Under Secretary to terminate when he sent his termination letter on January 26, 1971, and that his attempted termination of the contract under paragraph XII, effective March 28, 1971, was totally ineffective because he could not terminate a contract that no longer existed. We do not reach nor decide the other questions raised by the plaintiff with respect to Under Secretary Russell's attempted termination of the contract, because it is unnecessary to do so.

After plaintiff terminated the contract on December 24, 1970, it continued to extract helium and nitrogen from Northern's natural gas, delivering the thus purified gas to Northern for its fuel customers and nitrogen to Gas Products for rejection. Ethane was furnished to Petrochemical by Gas Products for the extraction and production of the described petrochemicals. The helium thus extracted after termination was tendered to the Government for the alleged purpose of mitigating damages, according to the plaintiff. Since the Government considered the contract still in effect until Under Secretary Russell terminated it as of March 28, 1971, the Government continued to accept and pay for the tendered helium up to that date but refused to accept any helium thereafter. On January 14, 1971, the Government paid plaintiff \$8,671,631.99 for helium delivered through November 30, 1970. Thereafter, on June 18, 1971, it paid the plaintiff \$2,285,872.87, which defendant stated was \$232,557.68 less than plaintiff was due for helium delivered from December 1, 1970, through March 28, 1971. This difference was explained by the Government as being \$32,557.68 due the Government under an interim contract 14-09-0060-3085 for storage of helium by the Government for the plain-

tiff from March 28 to April 30, 1971,<sup>4</sup> and \$200,000 claimed by the Government in a counterclaim filed by the Government in this case for the value of certain helium delivered by the plaintiff which was processed from natural gas extracted from land owned by the Government under leases from the Government to third parties.<sup>5</sup> The \$2,285,872.87 included \$532,431 for helium delivered from December 1, 1970, through December 25, 1970, and \$1,753,442, for the period from December 25, 1970, through March 28, 1971. The Government has paid \$1,786,000 to plaintiff for helium delivered subsequent to the breach, which includes the \$32,557.68 mentioned above. All the helium received for the account of the Government has been paid for. The plaintiff contends that this \$1,786,000 represents a part of the damages due it for the breach by the Government. The Government says it represents payment for helium received under the contract. We think both theories are wrong. The argument of the plaintiff would work against its interest because if approved, it would have to give the Government credit for the \$1,786,000 on any damages it is awarded in this case. Furthermore, this payment was not one for damages and cannot be so considered. The Government's position is likewise erroneous. The payment was made after the plaintiff had terminated the contract on December 24, 1970, and consequently, it was not and could not have been a payment under the contract. We conclude with respect to this transaction that after the contract was terminated on December 24, 1970, the plaintiff offered to sell a quantity of helium to the Government at a price of \$12.41 per m.c.f.

<sup>4</sup> On or about March 26, 1971, the parties entered into an interim contract for storage of helium for plaintiff by the Government without prejudice to plaintiff's rights to damages, for which storage plaintiff agreed to pay specified fees. This storage continued until September 28, 1972. The plaintiff has paid \$502,545 for this storage.

<sup>5</sup> This counterclaim has been deferred for later proceedings and is not a matter to be decided by us at this time.



and the Government accepted the offer and received and paid for it and the transaction was closed. There was a complete accord and satisfaction between the parties with reference to it. This course of dealing was separate and apart from the contract and has no effect on any issue in this case. We leave the parties where we find them with respect to this sale and payment after the contract was terminated.

We now consider the interim storage issue. As stated above, the plaintiff has paid the Government the sum of \$502,545 for storage of helium for its account delivered after March 28, 1971. This payment was made in accordance with the agreement of the parties made on or about March 26, 1971. Both parties agree that the title to the stored helium is in the plaintiff and that the Government will deliver it to the plaintiff on demand. Here again we have a transaction entered into by the parties after the termination of the contract that has nothing to do with the contract itself nor any issues in this case. The parties executed the storage contract at arm's length and both have complied with its terms. The following letter from the plaintiff shows that it fully understood that the helium was being stored for it by the Government and that it was willing to pay, and did pay, the Government for such storage:

Mr. Harold W. Lipper  
Chief, Division of Helium  
United States Department of the Interior  
Bureau of Mines  
Washington, D.C. 20240

Dear Mr. Lipper:

Enclosed is our check in the amount of \$195,260.88, which represents full payment of storage charges due under the Interim Storage Contract through August of 1972.

By reason of our inability to find a sufficient market for helium and the tremendous financial burden placed upon us by Interior's breach of the Helium Purchase Contract, we can not justify the storage of additional volumes of helium produced subsequent to September 28, either on a short-term or long-term basis. Thus, we are not in a position to renew the Interim Storage Contract.

We will, however, continue to pay storage charges accruing upon our helium remaining in storage after September 28. Although we expect to pay you at the rate specified in the Interim Storage Contract, we are hopeful that more equitable storage charges might be arranged.

You have acknowledged that the charges we have heretofore paid under the Interim Agreement cover the redelivery of our helium. Therefore, we call upon Interior to continue the redelivery of helium to Kansas Refined Helium as in the past.

In furtherance of the conservation of helium and in mitigation of the losing party's damages, we will continue tendering helium to Interior subsequent to September 28. It is understood that Interior's acceptance thereof will in no way prejudice either party's legal position.

Very truly yours,

/s/ S. F. Segnar  
S. F. Segnar  
President

Notwithstanding the foregoing facts, plaintiff seeks the recovery of the \$502,545 storage charges as a part of its damages. We do not agree that it is entitled to such recovery. Here again the parties entered into an interim storage contract at arm's length and both parties performed the



contract according to its terms. The Government stored the helium for the plaintiff and will deliver it to the plaintiff on demand. The plaintiff has paid for the storage according to the interim contract. The transaction is complete and an accord and satisfaction has been reached between the parties. We leave them where we find them with regard to the storage issue, which has nothing to do with the main issues in the case before us. The plaintiff is not entitled to recover such storage charges.

Paragraph 7.4 of the contract in issue provided a formula to cover plaintiff's potential liability to the lessee/producers for the value of helium not sold to the defendant under either a total price or projected unearned profit theory of damages. The defendant contends that the plaintiff would no longer have any contingent liability to the lessee/producers after either December 24, 1970, the date plaintiff terminated the contract, or March 28, 1971, the date defendant ceased to receive and pay for helium. The damage issue raised is whether the contingent liability is to be regarded as a potential cost of operation of the plaintiff or a potential profit. By a stipulation following trial, the parties deferred the resolution of this issue to later proceedings. Accordingly, we do not decide it. These claims have been the subject of other litigation. See *Northern Natural Gas Co. v. Grounds*, 441 F. 2d 704, 723 (10th Cir. 1971), *cert. denied*, 404 U.S. 951; *Ashland Oil Inc. v. Phillips Petroleum Co.*, 364 F.Supp. 6 (N.D. Okla. 1973).

The plaintiff has continued to operate its plant and extract helium and nitrogen from natural gas from the date it terminated the contract on December 24, 1970, up to the present time, claiming that it has done so and continues to do so to mitigate defendant's damages. This mitigation claim lacks substance. The helium is vented into the air and wasted. The plaintiff admits that the helium has no market value. It is unreasonable in the extreme for the plaintiff to say that for over 4½ years it has continued to extract

valueless helium from the gas and wasted it in the air solely for the purpose of mitigating defendant's damages. The rules applicable to the right of a seller to continue the manufacture and identification of goods to the contract are to be found in Sections 2-704(2) and 2-709(1)(b) of the Uniform Commercial Code. As stated by the court in its decision in *Northern Helix Co. v. United States*, 197 Ct. Cl. 118, 129, 455 F. 2d 546, 553 (1972):

\* \* \* The guiding principle is whether, in the individual circumstances, the seller exercised "reasonable commercial judgment" in continuing to manufacture and deliver, in the effort to mitigate damages, although his obligation to perform had been discharged by the buyer's total breach. \* \* \*

Defendant contends that since plaintiff's facility was continued in operation *solely as an accommodation and without charge* to Northern, its parent corporation, and to a sibling corporation, *i.e.*, Gas Products, *to whom plaintiff owed no contract duty and the continued operation patently was not performed in an effort to mitigate damages*, plaintiff's continued and continuing performance following breach was not an exercise of "reasonable commercial judgment" within the contemplation of the rule. *Anderson*, Uniform Commercial Code, § 2-704:5, n.10 at 535, states that "the matter of reasonable judgment is to a large degree controlled by the concept of good faith." It is obvious that after the plaintiff terminated the contract on December 24, 1970, or after the Government quit accepting and paying for helium on March 28, 1971, or after the plaintiff quit storing helium in the Government facility on September 28, 1972, the plaintiff did not extract helium to mitigate defendant's damages but did so in order to furnish helium and nitrogen free gas to Northern and nitrogen to Gas Products. The only mitigating circumstance shown by the evidence were sales by the plaintiff after the termination of the contract and during the years from 1971 through 1976

of quantities of helium to Kansas Refined Helium for the total sum of \$2,872,547. The Government is entitled to have this sum credited to any damages that may be awarded to the plaintiff against the Government in this case. The plaintiff claims expenses for transportation in connection with this sale in the sum of \$477,387 and travel expense in trying to sell helium during 1971 and 1972 in the sum of \$13,032. The defendant contends, and we agree, that the plaintiff did not prove that these amounts were correct, reasonable, or necessary. All the proof that plaintiff offered was its Exhibits 86E and F which were mere listings of these claimed expenses. The plaintiff should have proven that these expenses were spent, that the amounts were correct, reasonable, and necessary, and such other facts regarding them as were relevant. *River Construction Corp. v. United States*, 159 Ct. Cl. 254, 271 (1962). Exhibits 86E and F show that we are not being unduly technical about these items. These exhibits are as follows:

NORTHERN HELEX COMPANY  
*Sales to Kansas Refined Helium*

Year	Volume (Mcf)	Transportation	Revenue
1971.....	2,351	\$ 800	\$ 22,335
1972.....	54,964	46,598	522,370
1973.....	60,000	105,288	570,000
1974.....	70,000	122,836	665,000
1975.....	80,000	140,384	760,000
1976.....	35,036	61,481	332,842
Totals..	302,351	\$477,387	\$2,872,547

WDW: 23 March 1973

NORTHERN HELEX COMPANY  
*Travel Expenses Incurred Trying to Sell Helium*

1971.....	\$4,778.70
1972.....	8,253.45
Salary and telephone expenses unknown.	

Exhibit 86E was prepared and filed in court in 1973, yet it shows transportation charges for the future years of 1974, 1975, and 1976. Obviously, these charges are mere estimates and have not been incurred. Exhibit 86F does not show what the travel expenses were, who incurred them nor any other relevant fact regarding them. Ordinarily, we would reject these claimed items of expense for lack of proof. However, in view of the fact that further proceedings at the trial level of this court will be required in this case, the plaintiff should be afforded an opportunity to make the proper proof of these items of expense, and if it does so, the court will consider them as valid, mitigating expense claims.

The plaintiff flatly accuses the Government of wasting helium because it will not accept plaintiff's offer to furnish the helium to the Government provided the Government pays plaintiff the full contract price for it. In this regard the plaintiff says:

• • • If defendant continues to reject the offer and causes the helium to be wasted, that is the Government's choice as long as the taxpayers permit such irresponsible action. [Pltf's Reply Brief at 81.]

This argument is unpersuasive. It is clear that the only reason the plaintiff continues to extract helium from the gas is to supply helium-free gas and nitrogen to its related companies as a part of its integrated operations. It is obvious that the plaintiff is not extracting the helium through any patriotic motivation to preserve it as a natural resource for future generations. If that were the case, it could donate the helium to the Government since it is wasting the helium anyway. After all, it is the plaintiff, and not the Government, that is wasting the helium into the atmosphere. That can hardly be said to be an irresponsible act on the part of the Government. We are not advised whether the plaintiff is wasting the helium voluntarily or is being required or forced to do so by Northern, Gas Products, Petrochemical or anyone else. If the wasting is an irresponsible action, it is not that of the Government.



The Government cannot be excused for its breach of the contract. The plaintiff is entitled to recover common-law damages for such breach. However, it is not easy to calculate such damages in a case as complex as this one. As a seller of helium, it is not entitled to consequential damages. *Anderson*, Uniform Commercial Code, § 2-708: 15. Furthermore, remote and consequential damages are not recoverable in a common-law suit for breach of contract. *See Globe Refining Co. v. Landa Cotton Oil Co.*, 190 U.S. 540, 543 (1903). This is especially true in suits against the United States for the recovery of common-law damages, such as the instant case. *See Ramsey v. United States*, 121 Ct. Cl. 426, 101 F. Supp. 353 (1951), *cert. denied*, 343 U.S. 977 (1952); *Dale Constr. Co. v. United States*, 168 Ct. Cl. 692, 738 (1964); *Specialty Assembling & Packing Co. v. United States*, 174 Ct. Cl. 153, 175, 355 F. 2d 554, 567-68 (1966); *William Green Constr. Co. v. United States*, 201 Ct. Cl. 616, 626-27, 477 F. 2d 930, 936-37 (1973), *cert. denied*, 417 U.S. 909 (1974).

In the *William Green Constr. Co.* case we said:

\* \* \* And even in a common-law suit there would be no recovery for general loss of business, the claimed loss of the entire Green net worth, and losses on the non-federal work—such damages are all deemed too remote and consequential. *See Ramsey v. United States*, 121 Ct. Cl. 426, 433-35, 101 F. Supp. 353, 357-58 (1951), *cert. denied*, 343 U.S. 977 (1952); *Dale Constr. Co. v. United States*, 168 Ct. Cl. 692, 738 (1964); *Specialty Assembling & Packing Co. v. United States*, 174 Ct. Cl. 153, 175, 355 F.2d 554, 567-68 (1966).

In *Ramsey v. United States*, *supra*, we held:

Plaintiffs allege that the Government's failure to pay the money promptly was the immediate cause of the corporation's financial difficulties which resulted in a

reorganization under the Bankruptcy Act. In actions for breach of contract the damages are ordinarily limited to the natural and probable consequences of the breach complained of, and the damages remotely or consequently resulting from the breach are not allowed. \* \* \*

The profits lost from the corporation's over-all business activities, because of its shortage of capital allegedly occasioned by the Government's failure to pay the contract amounts when due, may not be recovered either. It is important to bear in mind that the corporation's claim is not for the anticipated profits of the contracts in question, but is a claim for the anticipated profits of its entire business enterprise. *The lost profits of these collateral undertakings, which the corporation was unable to carry out, are too remote to be classified as a natural result of the Government's delay in payment.* The statement of this court in *Myerle v. United States*, *supra*, p. 26, [33 Ct. Cl. 1 (1897)] fully disposes of this claim:

\* \* \* But we think there is a distinction by which all questions of this sort can be easily tested. If the profits are such as would have accrued and grown out of the contract itself, as the direct and immediate results of its fulfillment, then they would form a just and proper item of damages, to be recovered against the delinquent party upon a breach of the agreement. These are part and parcel of the contract itself, and must have been in the contemplation of the parties when the agreement was entered into. *But if they are such as would have been realized by the party from other independent and collateral undertakings, although entered into in consequence and on the faith of the principal contract, then they are too uncertain and remote to be taken into consideration as a part of the*

*damages occasioned by the breach of the contract in suit. [Id. at 433, 434-35, 101 F. Supp. at 357-58.] [Emphasis supplied—Footnote omitted.]*

These authorities support our denial of plaintiff's claim for the costs of the operation of its plant to the end of the contract term in connection with its non-federal work with its related companies, because such costs are too remote, speculative, and consequential to be compensable as damages. ~~Of course, the plaintiff is entitled to recover its pecuniary loss of anticipated and unearned profits.~~ The difficulty comes in determining what they are and how to calculate them. One complicating factor in this case is the fact that the plaintiff constructed a plant at a cost of \$11,500,000 to perform the contract and to participate in its integrated operations.<sup>6</sup> The plaintiff still owns and operates the plant for the benefit of its integrated processes. The plant had a value at the time of the breach, not only as a physical structure, but also for furnishing helium and nitrogen-free gas and nitrogen to its related companies. The latter value is a value that is excess to the value of the physical structure. It is possible and probable that the fair market value of the physical structure at the time of the breach was in excess of the cost (\$11,500,000) of the structure when it was built, especially after the structure was depreciated at five percent per annum. These excess values are values or benefits the plaintiff has received by reason of its performance of the Government contract and which it has not expended nor exhausted, but which it still owns, possesses and uses and will continue to use in its integrated operations. These excess values, whatever they may be, must be considered in calculating plaintiff's damages.

We hold that plaintiff's damages must be determined and calculated as follows:

<sup>6</sup> It was estimated that had the Government built a plant for the extraction of helium, it would have cost \$22,000,000.

(1) The excess, if any, of the fair market value of the physical plant at the time of the breach over the original cost of the plant (\$11,500,000) depreciated in straight line depreciation of five percent per annum should be determined. The resulting figure represents the excess value, if any, of the physical plant at the time of the breach over the original cost of the plant depreciated.

(2) The excess value of the plant at the time of the breach occasioned by its continued operation in the "integrated" process of plaintiff and its related companies as an on-going operation for the extraction of helium and nitrogen and the furnishing of helium-nitrogen-free gas and nitrogen to plaintiff's parent and sister companies should be determined. This value is separate and distinct from the excess value, if any, of the physical plant over its depreciated original cost of \$11,500,000.

(3) The excess value of the physical plant, if any, over the original cost of the plant depreciated should be added to the excess value of the plant as an on-going and functioning plant that is operating and will continue to operate in plaintiff's integrated operations. The sum of these two values represents the total excess value of the plaintiff in its helium plant that has not been expended nor exhausted by the performance of the contract with the Government, but is an asset or benefit conferred on the plaintiff by its performance of the Government contract and which it owned, possessed, and used at the time of the breach and still owns, possesses, and uses and will continue to own, possess, and use in the future in its integrated operations.

(4) The sum of the excess values described in (1) and (2) above should be added to the total stipulated anticipated manufacturing costs of \$43,067,413 that the plaintiff would have expended to the end of the contract term. This addition results in the total anticipated costs and benefits of the plaintiff attributable to the helium contract; i.e.,



total cost and benefits not spent by plaintiff because of the breach.

(5) The sum of the excess values of the plant and the anticipated manufacturing costs should be subtracted from the total anticipated revenues, before taxes, to the end of the contract period in the sum of \$80,255,000. The resulting figure represents the anticipated profits from this contract to the plaintiff, subject to the following deductions.

(6) From the foregoing anticipated profits, the proceeds of the sale of helium to Kansas Refined Helium in the sum of \$2,872,547, less any expenses properly proved up by the plaintiff as indicated above, must be subtracted, along with savings found by the trial judge of \$11,000 per year to the plaintiff if it did not operate the helium plant, and any other savings to it by its non-performance of the contract because of the breach. The resulting figure, discounted to current value as of the date of entry of final judgment, should place the plaintiff in as good a position as it would have been in had the contract been fully performed.

The plaintiff contends that the anticipated revenues from the contract should be escalated in accordance with the wholesale price index formula provided in Article 7.3(b) of the contract. We do not agree. In our opinion this Article would be applicable only in the event we awarded the plaintiff the full contract price as damages. Since we are awarding it only its anticipated profits as calculated above, the escalation Article is irrelevant and should not be applied after the date of the breach. After that date, the contract was terminated and of no further force and effect. There is no more reason to enforce the escalation Article than the Article dealing with damages in case of termination (Article 13). Furthermore, if anticipated profits are escalated, anticipated costs would have to be escalated also. In that case, the profits and costs would more or less offset each other. However, the anticipated cost escalation might exceed the profit escalation and this would be detrimental to

the plaintiff. We hold that the escalation Article is not applicable. Accordingly, we do not reach nor decide the controversy between the parties as to the proper years to be selected as the base period from which to predict or project the probable escalation of the wholesale price index through 1983.

The plaintiff contends that it should be awarded interest on its award of damages to offset the discount to current value of its award. We recently considered the question of interest in an in-depth opinion in the case of *United States v. Mescalero Apache Tribe*, 207 Ct. Cl. — (decided July 11, 1975) in which we held unequivocally that in non-condemnation cases interest cannot be awarded against the Government in the absence of a statute, treaty or contract providing for interest, and that this is true whether it is called interest, penalty, offset or damages. The instant contract does not provide for interest and we are without authority to award it. The interest claim is denied.

Judgment is entered for the plaintiff for its anticipated profits as damages for defendant's breach of contract in accordance with this opinion, and the case is remanded to the trial judge to determine such damages under Rule 131(c), and for other appropriate proceedings.

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COWEN, Chief Judge, concurring:

The proceedings in this big and difficult case have reached the stage where the principal issue to be decided is the measure of damages that should be used to compensate plaintiff for the defendant's breach of contract.

The Uniform Commercial Code does not apply to this case; both parties agree that plaintiff's damages should be computed in accordance with common law principles, and the court has followed that course. Even if we were to look to the Code as a general guideline, we would be faced with a



sharp dispute between the parties as to which of its sections relate to this case. Since the Code does not apply, we need not resolve this dispute.

Whether plaintiff is entitled, as it asserts, to recover the full contract price, or whether it should be compensated in accordance with the court's formula, is a mixed question of law and fact. The answer is necessarily a conclusion to be derived in substantial part from pertinent evidence and an interpretation of certain provisions of the contract.

The principal negotiators for the contract, which was executed on August 15, 1961, were Henry P. Wheeler, Jr., Assistant Director of the Bureau of Mines, who represented the Government, and F.C. Nicholson, who began his employment with Northern Natural Gas Company in 1958, and was a vice president of Northern during the negotiations. The testimony of these men and the reports and memoranda which they wrote shed much of the light provided by the record on the issue of whether, during the negotiations, defendant contemplated that, if it breached the contract, it would be responsible for the cost of continuing the operation of the helium plant.

Taken as a whole, the testimony of Mr. Nicholson<sup>1</sup> shows that the Government was not interested in nor did it inquire about plaintiff's cost of constructing the helium plant, the process to be used in extracting the helium, or the physical connection or relation between the helium plant and other units to be operated by Northern and its subsidiaries. The representatives of the Government assumed that the helium plant would be integrated with other facilities at Bushton, but the probability of such integration was not mentioned by the negotiators as a part of the consideration for the contract price. The Government's main concern was to acquire helium from plaintiff at less than the cost of recovering it in a plant constructed and operated by the Govern-

<sup>1</sup> Nicholson Cross Examination Tr. 477-581.

ment. Thus, the contract price was developed on the basis of what it would cost the Government to produce helium in its own grass-roots plant—a plant independent of all other operations (Nicholson Tr. 503).

The testimony of Mr. Wheeler accords in all material respects with that of Mr. Nicholson. Mr. Wheeler stated that the contract price was negotiated, not on the basis of the cost of plaintiff's plant, but on what the cost would be if the Government constructed its own plant and removed the helium from the gas. He also testified that any references made by the representatives of Northern Helix to an integrated plant had no effect on the discussions relating to the contract price.<sup>2</sup>

In the operation of the helium plant, a nitrogen methane gas mixture is necessarily extracted in the process of recovering helium. In the early part of 1970, following changes in the contract between Northern and Gas Products, Northern began piping the nitrogen-methane mixture (referred to as a "high-nitrogen, low-B.t.u. stream") from the helium plant to the ethane plant. The purpose of this operation was to use the small amount of methane in the mixture as fuel and to reject or remove the nitrogen. The rejection of the nitrogen was not necessary to the physical operation of the ethane plant which could and did produce ethane without the removal of nitrogen. However, the nitrogen was removed so that the net B.t.u. value of the gas stream piped from the helium plant would not be reduced by the removal of the ethane. The gas residue was then piped into Northern's transmission lines for sale to its customers. Plaintiff's claim of entitlement to the full contract price is largely grounded on its contention that the continued extraction of nitrogen in plaintiff's helium plant is essential to the process by which the nitrogen is rejected in the ethane plant; that this was contemplated when the contract was executed, and that

<sup>2</sup> Wheeler Tr. 675-677.

defendant then understood, or should have understood, that a breach of the contract would make it liable for the costs required to continue the operation of the helium plant. This contention is contrary to the following testimony given by Mr. Nicholson:

“Q \* \* \* The helium company was not all concerned under its contract with the Government with the production of nitrogen, was it?

“A The helium company was not at all concerned with the production of nitrogen in the negotiations with the Government for helium.” (Tr. 535)

The same conclusion is reached when one considers the facts regarding the construction and operation of the several facilities of Northern and its subsidiaries at the Bushton complex. Gas Products LPG plant is a self-supporting grass-roots plant which was built in 1961 to remove propane butane, isobutane, and natural gasoline from the gas stream fed into it by Northern. The LPG plant can operate wholly independently of the helium plant. The helium plant made its first delivery to the Government on December 7, 1962. The original plans for the design and construction of the helium plant included special boilers which would burn the low B.t.u. fuel left after the removal of helium. However, the Federal Power Commission ruled that the nitrogen used in this manner would have to be valued as a fuel and costed on a volume basis. When this was found to be economically disadvantageous, plaintiff reinjected the low B.t.u. stream into the pipeline downstream from the helium facility.<sup>3</sup> This procedure continued until 1970, when the ethane plant began operations.

Near the end of 1966, Northern decided to begin the extraction of ethane and on July 3, 1967, filed an application with the Federal Power Commission requesting authorization for Northern to deliver additional volumes of gas to

<sup>3</sup> Trial judge's finding 111.

Gas Products for use in such extraction. Northern realized that the extraction of ethane would reduce the B.t.u. content of the gas stream sold to its utility customers, and in order to avoid a lengthy and complex hearing, Northern stated that nitrogen would be extracted from the additional volume of gas delivered to Gas Products to offset the B.t.u. loss. Northern also assured its utility customers and the Commission that the B.t.u. content of the gas stream which Northern had been delivering to its utility customers would not change by reason of the extraction of ethane.<sup>4</sup>

On June 26, 1967, about the same time the application to the Federal Power Commission was filed, the 1960 contract between Northern and Gas Products was amended to provide for the delivery by Northern of additional quantities of natural gas so that Gas Products could commence the extraction of ethane. The contract provided that in its ethane extraction process, Gas Products would not lower the B.t.u. value of the residual gas to be returned to Northern for sale to its customers.<sup>5</sup>

Construction of the ethane facility was begun in 1969, and the plant began operation early in 1970. Thereafter, gas leaving the LPG plant, which formerly had been piped directly to the helium plant, was piped into the ethane facility for processing prior to transmittal to the helium plant. The high-nitrogen, low B.t.u. stream remaining in plaintiff's plant after removal of the helium was then diverted to the ethane facility and used to fuel that plant's special boilers.<sup>6</sup> This diversion was made so that nitrogen could be removed at the ethane plant in compliance with the FPC order and Northern's assurances to the FPC and its customers that the B.t.u. content of its gas stream would not be lowered by the ethane extraction.<sup>7</sup> As previously

<sup>4</sup> Trial judge's finding 116.

<sup>5</sup> Trial judge's finding 127.

<sup>6</sup> Trial judge's finding 111.

<sup>7</sup> Trial judge's finding 116.



noted, it is not physically necessary to remove nitrogen in order to extract ethane from natural gas.

There is no provision in the contract between plaintiff and Northern, and there is no contract between plaintiff and Gas Products which states that plaintiff is obligated to remove nitrogen from natural gas.<sup>8</sup> Plaintiff receives no payment for that operation. The application, which Northern filed with the Federal Power Commission regarding the proposal for the extraction of ethane, made no reference to the extraction of nitrogen by the plaintiff nor was there any statement that plaintiff was so obligated in order to enable Gas Products to reject the nitrogen.

Several provisions of the contract further support the conclusion that the Government did not contemplate that, in the event it breached the contract, it would assume the obligation of continuing the extraction of nitrogen in the helium plant so that Gas Products could comply with its 1967 contract with Northern. Paragraph 1.1 of the contract provides that the term "plant" means the helium extraction plant to be constructed and owned by seller "whether completed or under construction and whether separate from or integrated with other facilities owned by Seller. \* \* \*" This provision is another indication that the integration of plaintiff's plant with other facilities in the Northern complex was not a factor contemplated as a basis for future liability by the Government. It is an expression by the Government of a lack of concern as to whether the helium plant would be a purely independent plant or whether it would be integrated with other facilities.

I agree with Judge Skelton that the following articles absolve the Government from any liability for the cost of any operations or processes by Northern or Gas Products that may have been integrated with the helium plant: Paragraphs 31.2 and 31.3 of Article XXXI, which are quoted in

<sup>8</sup> Trial judge's finding 125.

the court's opinion, and Article XV, which provides that "each party will be responsible for its own acts and the results thereof."

While paragraph 31.3 of Article XXXI relates to the assumption by plaintiff of risks attributable to any additional facilities which it might construct during the term of the contract, I agree with the defendant's observation that it necessarily follows that if the Government was relieved of liability for any such facilities built by plaintiff, it was all the more freed of any liability on account of any other facilities built by Northern or others of its wholly owned subsidiaries after the contract was executed. This would include the facilities put in operation in 1970 by Gas Products to reject the nitrogen in the stream which, contrary to the procedure previously followed, is now diverted from the helium plant to Gas Products.

If, as plaintiff contends, the Government foresaw the necessity for plaintiff to continue the operation of the helium plant in order to permit the rejection of nitrogen in the ethane plant, one wonders why, during the negotiations, the Government made no inquiry about and was given no detailed information, such as a blueprint or diagram of the existing and planned facilities, or a description of the physical connections among the various plants operated or proposed to be operated by Northern and its subsidiaries at the Bushton complex. One also wonders why the Government, if it was to be bound by the contractual obligations entered into between Northern and the plaintiff and between Northern and Gas Products, did not insist that it be given copies of such contracts or proposed contracts at the time the negotiations were conducted. Northern, as sole owner of the subsidiaries, could amend its contracts with them at any time. Realizing this, the Government did not concern itself with these intercorporate contractual arrangements, because it did not contemplate that, in any event, it would be bound by them.

In my view, the facts which have been reviewed above clearly demonstrate that the Government did not foresee the liability which plaintiff would now impose upon it. Furthermore, it would be beyond the pale of reason to find that the Government should have foreseen risks resulting from the changing pattern of processes and operations of Northern and its subsidiaries after the contract was executed. The plaintiff itself did not decide to change the design of its helium plant until a ruling of the Federal Power Commission caused it to do so and to reinject the low B.t.u. stream into the downstream pipeline.

Until December 11, 1967, when the Federal Power Commission approved Northern's application of July 3, 1967, neither plaintiff, Northern, nor Gas Products knew that Gas Products would be required to reject nitrogen in the stream received from the helium plant in order to permit Gas Products to produce ethane from the additional gas to be delivered by Northern. Since these events occurred 6 years after the contract with the Government was entered into, how could the Government possibly have foreseen an obligation to keep the helium plant in operation in order to permit the rejection of the nitrogen?

The fallacy of plaintiff's position may be illustrated by the following: Let us assume that the contract was in full force and effect for a period of 12 years or until August 15, 1973, when it was breached by the Government. Let us also assume that near the end of 1971, Northern discovers a feasible process for recovering the nitrogen extracted by plaintiff in the production of helium and utilizing the recovered nitrogen as a feed stock for the production of ammonia. Northern thereupon creates a new wholly owned subsidiary corporation, builds a plant for recovery of nitrogen, and enters into a contract with the new subsidiary for that purpose. Then, for the second time after the contract with the Government was executed, a change is made in the diversion of the high-nitrogen, low B.t.u. stream

from the helium plant, and the stream is now piped to the new nitrogen plant. After the contract is breached by the Government, plaintiff takes the position that the helium plant is now fully integrated with the new plant for the production of nitrogen; that the Government should have predicted and therefore should have foreseen these developments, and that it is now obligated to pay the full contract price in order that the helium plant may enable the nitrogen plant to carry out this newly integrated operation. Obviously, such a claim would be devoid of merit. In my opinion, plaintiff's claim for the full contract price is also without merit.

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NICHOLS, *Judge*, concurring in part, dissenting in part:

I agree with much of the court's opinion, but dissent as to the vital matter of how we should treat the estimated projection of cost of performance of \$43,067,413, as stipulated. The trial judge would not deduct this from the estimated contract revenues, nor would I. The court disagrees.

By UCC § 2-709, if the buyer wrongfully refuses to pay the purchase price, and the seller cannot sell the goods elsewhere, the buyer remains liable for the price. By UCC § 2-708 (1) and (2), the buyer is entitled to a credit for expenses saved the seller by the breach if, but only if, this measure is adequate to put the seller in as good a position as performance would have done. UCC does not directly govern here, but the above rules do not differ materially from those acknowledged by the court to apply at common law. So far as I can tell, we differ as to issues of fact, more than law.

If I contracted with Swift & Co. to buy all the squeal produced by its pigs, and if I reneged, I would not expect Swift & Co. to stop slaughtering pigs. I would, therefore, under the UCC, expect that Swift & Co. would go on slaughtering pigs, and any mitigating cost savings I could



show would have to take that into account and probably would be slight indeed. Yet the court here, in an analagous situation, demands that the group with which plaintiff is affiliated, and with which it has integrated its operations, should stop producing natural gas. Because it does not do this, the court refuses to put plaintiff in as good a position as it would have been in upon full performance.

The record herein shows without contradiction that the Government always foresaw, and in a sense required, that plaintiff would integrate into a commercial natural gas production. Only thus could the cost be brought below the cost of a non-integrated operation. Absent such integration, and the cost savings to be expected therefrom, the Government would have preferred to produce helium in its own plants. To pretend that, under the contract, nothing but purchase of helium was involved, is to substitute a sterile legalism for the broad remedial relief the law prescribes against an unexcused contract breach.

The court puts on its blinders so as to be able to say it is putting the plaintiff in as good a position as it would have been in upon full performance, the standard it gives lip service to and should follow in reality. The court knows from the record that the three-stage refrigeration process at plaintiff's plant produces, at the third stage, about 295°F. and colder, a gas mixture, 72% helium and 27% nitrogen, which the Government bought, and a liquid residue, 26% methane, 73% nitrogen, and 0.01% helium, which is good only for fuel in special low-BTU boilers which exhaust this helium and nitrogen into the air. Plaintiff could not produce salable helium without producing these, too, and they, with the methane and the purified natural gas, are the usable products of plaintiff's plant now that the Government no longer will buy the helium. Stoppage of this plant would disrupt the other elements of the integrated system and apparently, cause a larger loss than the stipulated cost, \$43,067,413, incurred by keeping open.

The Chief Judge's able concurrence became available only after I had written the above, and requires further specificity by me. I rely primarily on the trial judge's findings 26 and 79. Defendant did not except to these findings except in particulars not here relevant. It desired additions rather than deletions. They show that defendant elected to contract with plaintiff to obtain a reasonable cost to the Government, because the investment in the plant and operating costs "could be spread over several other end-products rather than helium alone", and would "avoid the necessity for the Government to undertake nitrogen removal and possibly petrochemical operations as a necessary, but basically unrelated, adjunct to helium conservation." Presumably this necessity of embarking in petrochemical operations in the suppositious Government plant was to spread the costs as a private, integrated plant would do. In the March 30-31, 1961, negotiations, plaintiff advised that the helium plant to be built would be "fully integrated" with the Bushton liquids recovery plant, and that "petrochemical facilities might be constructed and added in the future." Mr. Wheeler, government negotiator, "recognized that the helium extraction facilities would, in most cases, be fully integrated with other facilities of the contractor."

Finding 125, following a description of the integration achieved after the contract date, reads in part: "All of these integrated operations are in implementation of Northern's original plans as executed through wholly owned subsidiaries." Defendant does not deny that this is true, in its exceptions, but says only it is irrelevant because the Government contract was not with Northern, *i.e.*, it is irrelevant because of the legal theory urged in Judge Skelton's opinion.

In view of this, I do not see how it can be said that the defendant could not have foreseen in general the measures adopted by plaintiff in 1970, as the Chief Judge describes



them. Defendant's officials did not know exactly what plaintiff was going to do, but they expected plaintiff to exploit to the full all the capabilities of its helium plant. They could hardly have believed plaintiff would continue its pre-1970 procedure of feeding back into the pipeline downstream from the plant the useless and detrimental nitrogen it had gone to so much trouble and expense to extract. When plaintiff stopped doing this, had it done otherwise something else than what it actually did, that something else likely would have knit the helium plant into the other plants in a way that would have been costly to unravel. If it is true that before 1970, plaintiff could have stopped producing helium without damage to the other operations, this is because the integration in that period was incomplete.

The question is one of the inferences to be drawn from the record. Our trier of fact drew his inferences, and we are rejecting them, I believe, without respect for the presumption of correctness demanded by Rule 147(b). It seems to me that the implication of this rule is that we do not disregard numbered findings, but if we think the record does not support them, we take them up individually and show why. The Government did not in 1961 actually address itself to what the damage consequences of a breach would be. Finding 125 shows that a plan for integrated operation existed, substantially the plan actually implemented before the breach. Defendant knew the helium plant would be made part of an integrated operation which might include new petrochemical facilities. (Findings 26 and 79.) If the Government did not obtain the details, the fault was its own. However, it did not do this because it did not anticipate it was going to breach the contract. Therefore, it is chargeable with what it could have learned. The Chief Judge's argument seems to imply that a party to a contract who fails to inquire or consider what the consequences of a future breach by it will be, thereby limits its liability for

damages in the event it actually commits such a breach. I do not think this is the law.

I do not get any help from Article XXXI, para. 31.3, quoted by the court. It is ambiguous whether the "risk" referred to is the risk of unexcused breach by the Government. The "legislative history" of the clause shows that the parties had entirely different kinds of risks in mind. American courts do not favor contract clauses to exculpate a party from the legal consequences of his own wrong. *The Bremen v. Zapata Off-Shore Co.*, 407 U.S. 1 (1972), deals with this policy. See especially the fn. in Mr. Justice Douglas's dissent at p. 24. Thus the clause here involved should be construed not to apply to the risk that a party might wilfully breach the contract.

I would be willing to give credit for the excess in the value of the plant over cost less depreciation at the time of the breach, if the court means just after it. However, in that event any deficiency in the fair market value, should also be charged to the Government. Presumably such deficiency, if it exists, is caused by the breach.

IN THE UNITED STATES COURT OF CLAIMS  
TRIAL DIVISION

No. 454-70

(Filed December 3, 1974)

NORTHERN HELEX COMPANY

v.

THE UNITED STATES

**Report of Trial Judge to the Court \***

*Clarence T. Kipps, Jr.*, attorney of record for plaintiff.  
*John L. Rice, Miller & Chevalier, F. V. Roach, Ralph P. Blodgett, Jim W. Krueger, Dean W. Wallace and Edward J. Vandermark*, of counsel.

*Edward J. Friedlander*, with whom was *Acting Assistant Attorney General Irving Jaffe*, for defendant.

OPINION

SPECTOR, *Trial Judge*: This is an action for damages for breach of contract. It has been characterized in counsel's brief as "one of the largest, most unique, and complex ever presented to this Court," a reasonably accurate description.<sup>1</sup>

*Introduction*

The case originates in an unusually long-term agreement dated August 15, 1961, between plaintiff and defendant, acting through the U.S. Department of the Interior ("Interior"). Under it Interior agreed to purchase, and plaintiff agreed to produce and supply, an estimated 13.5 billion cubic feet (b.c.f.) of helium gas mixture over a

\* The trial judge's recommended decision and conclusion of law are submitted in accordance with Rule 134(h).

<sup>1</sup> The prayer for relief in plaintiff's second amended petition is \$99,964,000.

period of 22 years, as part of a program for conservation of this valuable and depleting natural resource, for the long-range future needs of the Nation.

Plaintiff declared the contract at an end and filed suit December 24, 1970. Extensive preliminary litigation ensued on an expedited basis due to the sums involved and the wasting nature of this resource. In response to cross-motions for summary judgment, the court, on January 21, 1972, decided "the issues of materiality of the defendant's breach and of claimed waiver by the plaintiff of that default." It cautioned:

\* \* \* Only those threshold issues of liability are disposed of today; the critical questions of the validity of the subsequent termination of the contract by the Government and of the recovery of damages by the plaintiff are not before us in any way. [<sup>2</sup>]

On the threshold issue of whether the contract had been breached by defendant, the court concluded:

\* \* \* We have, in short, not the slightest doubt that the prolonged failure to pay large amounts was a material breach of the contract. [<sup>3</sup>]

Noting "the harshness of a contrary result on our special facts, where cessation of production was commercially impossible and avoidance of waste most desirable," and where "continuation of performance reasonably served to mitigate damages," the court concluded as to the second threshold issue that there "has therefore been no waiver of defendant's breach."<sup>4</sup>

<sup>2</sup> *Northern Helex Co. v. United States*, 197 Ct. Cl. 118, 120, 455 F.2d 546, 548 (1972).

<sup>3</sup> 197 Ct. Cl. at 125, 455 F.2d at 550.

<sup>4</sup> 197 Ct. Cl. at 130, 132-33, 455 F.2d at 553, 554-55.

For these reasons, we hold that the Government's breach (through non-payment) was material and total, justifying the contractor in considering the contract at an end, and that Northern Helix has not waived that breach. We stress, however, at the end of this opinion as we did at the outset, that we in no way pass upon plaintiff's claim to damages, full or partial, for this breach. This reservation includes the question, among others, whether the Government's termination of the contract in January 1971 would have been valid under the termination provision if the contract had remained in effect. All those issues relating to damages are not before us and we leave them entirely open, without intimating any opinion or tendency. \* \* \* [5]

Other preliminary litigation flows from plaintiff's motions, initiated with the filing of the petition, to permit continuation of helium deliveries in mitigation of damages and in aid of conservation, not in furtherance of performance of the contract which has been declared at an end. Defendant controls this temporary solution because it owns the only storage facility capable of receiving and preserving helium in the quantities and for the length of time required and contemplated by the conservation program. During contract performance, plaintiff's extraction facilities constructed at Bushton, Kansas ("Bushton"), fed helium into defendant's 425-mile pipeline system which extends from Bushton to defendant's Cliffside storage reservoir near Amarillo, Texas.<sup>6</sup>

On March 10, 1971, prior to the filing of defendant's answer, plaintiff sought such an order in mitigation of

<sup>5</sup> 197 Ct. Cl. at 134, 455 F.2d at 555-56.

<sup>6</sup> For a general description of this reservoir, see *Emeny v. United States*, 188 Ct. Cl. 1024, 412 F.2d 1319 (1969), a "taking" case.

damages and without prejudice to either party in the pending litigation. It was denied by the trial judge March 19, 1971, as beyond the power of the court at that juncture. Negotiations with Interior were then underway which could have rendered plaintiff's motion academic. The court affirmed, March 26, 1971, on advice that Interior had agreed to store helium under an agreement to be negotiated which would provide for payment of storage charges by plaintiff. Denial of plaintiff's motion was without prejudice to its "right to recover any damages to which the court may find it is entitled, and without prejudice to plaintiff's right to renew its motion if warranted."

After it had incurred about a half-million dollars in charges payable to Interior under the negotiated interim storage agreement, plaintiff, on September 12, 1972, renewed its motion to mitigate damages and conserve helium for the benefit of the losing party pending the outcome of this suit for damages. Interior had advised that it would stop accepting helium for storage on September 28, 1972, absent extension of the agreement authorizing storage solely at plaintiff's expense, and plaintiff did not believe it should continue to incur large storage charges, plus monthly costs in the hundreds of thousands of dollars for operating the helium facilities, and unrecoverable interest expense.

On September 27, 1972, plaintiff's motion was denied by the court which observed:

Insofar as plaintiff's motion seeks to bring about the mitigation of damages, the court sees no need to compel defendant, against its will, to take that course; if the defendant voluntarily elects not to mitigate damages, any financial detriment it may ultimately suffer will be of its own choosing. On the other hand, plaintiff's interests, to the extent it prevails with respect to damages and recovers a monetary judgment, will be fully protected by the judgment, and



will not be harmed by the failure of the defendant to continue to receive and store helium. \* \* \* Public Law 92-415, 86 Stat. 652, together with the law existing prior to that statute, does not empower this court to enter such a specific mandatory order solely on grounds of conservation, no matter how great those needs may be. [7]

Since September 28, 1972, when Interior turned off the valve to its pipeline and storage reservoir, plaintiff has continued to tender helium produced at its Bushton facility. It has not been accepted, but has instead been vented into the atmosphere.

Still other preliminary litigation relates to defendant's affirmative defense, one of the large issues in the case alluded to in the court's opinion of January 21, 1972.<sup>8</sup> Therein defendant undertakes to establish that since the contract provided that the Secretary of the Interior might terminate it under certain specified circumstances, and since by letter of January 26, 1971 (subsequent to the breach), he purported to terminate it effective March 28, 1971, plaintiff is not entitled to payment for helium produced after that date.

The contract provision, on which the affirmative defense rests, is as follows:

12.1 The United States may terminate this contract at any time if any of the following circumstances or any other circumstance of similar nature should occur which, in the opinion of the Secretary of the Interior, would make the continued operation of Seller's plant and the continued purchase of helium-gas mixture extracted therein unnecessary to accomplish the purposes of the Act or any amendments there-

<sup>7</sup> 199 Ct. Cl. 998-99.

<sup>8</sup> 197 Ct. Cl. at 125, 134, 455 F.2d at 550, 555-56.

to: (1) the discovery of large new natural helium resources, or (2) a substantial diminution in helium requirements. Upon such termination, the provisions of paragraphs 9.4, 12.3 and 13.1 shall apply.

Because a number of the subissues in the case grow out of the Government's affirmative defense, other preliminary litigation has swirled about comprehensive and often controversial deposition and discovery proceedings relating to those issues. Formal claims of executive privilege were interposed by the Executive Office of the President, the Director, Office Manpower and Budget, and the Secretary of the Interior, culminating in orders prescribing *in camera* examination of material sought, for appropriate segregation.<sup>9</sup>

In somewhat related litigation, three other helium contractors, engaged in the conservation program under similar but not identical contracts, procured an injunction March 27, 1971,<sup>10</sup> restraining the termination of their contracts because the Secretary of the Interior had not filed the necessary environmental impact statement mandated by the National Environmental Policy Act (NEPA). The preliminary injunction was sustained on appeal to the 10th Circuit.<sup>11</sup>

Interior thereafter, on November 13, 1972, filed an environmental impact statement addressed to these other three contracts, but not to plaintiff's contract. A decision of June 11, 1973, by the U.S. District Court for the District of Kansas,<sup>12</sup> finding the statement inadequate, was reversed by the 10th Circuit on October 19, 1973, and the

<sup>9</sup> For example, see 198 Ct. Cl. 996-97 (1972).

<sup>10</sup> *National Helium Corp. v. Morton*, 326 F. Supp. 151.

<sup>11</sup> *Idem*, 455 F.2d 650 (1971).

<sup>12</sup> 361 F. Supp. 78.

injunction ordered dissolved.<sup>13</sup> During the time the injunction was in effect, Interior received, paid for, and stored helium produced by the other three contractors.

A successor Secretary of the Interior had, on February 2, 1973, sent a second termination notice to the other three contractors to be effective 60 days thereafter. This second notice did not purport to terminate plaintiff's contract.

Several other matters have been deferred for future proceedings. These include defendant's counterclaim for the value of some helium delivered by plaintiff which was processed from natural gas extracted from federally owned lands under leases issued by the Government to third parties. Defendant, on this account, has withheld \$200,000 from amounts otherwise admittedly due.

Also deferred is determination of the amount of recovery by plaintiff under the above-quoted contract provision 12.1, should the court hold that the purported termination after breach was effective under that provision. By stipulation following trial, the parties also deferred the issue of reimbursement to plaintiff for any contingent third party claims (by landowners and producers for the helium content of their natural gas). These claims have been the subject of still other litigation.

In summary, when trial and filing of all briefs were concluded October 29, 1973, the following broadly-stated issues remained for disposition:

On the affirmative defense alleged by the Government—

(a) The validity of a termination notice, under the contract, after the contract no longer remained in effect.

(b) The validity of a termination notice under the contract, absent the filing of an environmental impact statement pursuant to the NEPA.

<sup>13</sup> 486 F.2d 995.

(c) Whether the decision to terminate under the contract represented "the opinion of the Secretary of the Interior," as set forth in contract provision 12.1.

(d) A determination of the "purposes of the Act" (Helium Act of 1960), upon which the Secretary's opinion was to be premised, as set forth in contract provision 12.1.

(e) Whether there was "the discovery of large new natural helium resources," rendering conservation unnecessary.

(f) Whether there was a "substantial diminution in helium requirements," rendering conservation unnecessary.

(g) Whether there was "any other circumstance of similar nature" rendering conservation unnecessary.

On plaintiff's petition for damages for breach of contract—

(h) The proper measure of damages at common law.

(i) Whether the damages so measured are to be diminished by the possibility that circumstances warranting exercise of the termination provision might have occurred at some time in the future, but prior to the contract expiration date.

(j) The facts underlying integration of the helium extraction facilities with liquefied petroleum gas and petrochemical operations, and the effect of integration upon the plaintiff's ability to mitigate damages in the amount of costs of performance, by cessation of operations.

(k) Any other opportunities of the plaintiff to mitigate.



(1) The portion of the contract price allocable to profit and, as raised by defendant, the issue of whether that profit factor in the contract price is unconscionable.

The pertinent underlying and historical facts cut across all of these issues and are, therefore, best set forth as a chronology. They begin with the preliminary plans of the parties and continue through the legislative background of the helium conservation program, the contract negotiations, the nature of and degree of integration of the industrial facilities constructed, the uses of and needs for helium past, present and projected, the nature of and quantity of known helium resources, the administration of the helium conservation program, the circumstances surrounding purported termination of the program, and the efforts to mitigate damages.

#### *Preliminary Plans of the Parties*

Northern Natural Gas Company ("Northern") was regularly engaged in the transmission of natural gas. In 1956 it initiated an investigation of diversification prospects, specifically by expanded use of the ingredients in its natural gas streams. A study in early 1957 established the feasibility of recovery of liquefied petroleum gas products ("LPG") such as ethane, propane, butane and pentane at some point on its gas collection and transmission system.

Also considered was the recovery of helium, in association with nitrogen extraction, for the following economic reasons. Both these elements are noncombustible or inert gases with no heating value. Other ingredients in natural gas are combustible hydrocarbons with a heating value measured in British thermal units (B.t.u.'s). When non-combustibles in a gas stream are extracted, the heating value of the remainder increases proportionately, permitting extraction of combustibles such as the above-de-

scribed LPG products without reduction of the B.t.u. level below that in the original gas stream. Natural gas in which the heating value has been maintained at about 1000 B.t.u.'s per cubic foot is readily salable on the fuel market.

Moreover, economies can be achieved by combining nitrogen rejection with helium and LPG recovery in one industrial complex. Both helium and nitrogen have low liquefaction temperatures and can be extracted only by a cryogenic process which drastically cools the natural gas to a point where substantially all its ingredients are liquefied except helium and nitrogen remaining as a vapor.

Two major factors therefore contributed to Northern's diversification into the LPG and petrochemical industries. All of Northern's pipelines, which collect gas from a multiplicity of wells, intersect at Bushton, and Northern's main distribution system begins at this gathering point. Because the gas streams collected at Bushton contain a relatively high percentage of inerts (including the richest known source of helium in the world), significant quantities of LPG products and other hydrocarbons can be extracted along with the inerts without adversely affecting the heating value of the residue gas.

Northern was prepared to invest from \$200 to \$300 million in such a diversification project, and it retained acknowledged experts in the field to plan and direct these activities.

Independently, Interior was establishing a Helium Policy Working Group in 1957 to develop a national policy and estimates of cost for a helium conservation program. Headed by Under Secretary of the Interior O. Hatfield Chilson, the group included representatives of the Departments of Defense, Commerce and the Interior, the Atomic Energy Commission, the Bureau of the Budget and the Office of Defense Mobilization. In October 1957 its pertinent subcommittee recommended that the Government fi-



nance and build 13 new helium extraction facilities, the first at Keyes, Oklahoma. It also recommended that serious consideration be given to inviting industry participation in the program.

On January 24, 1958, a comprehensive report on National Helium Conservation Policy, thereafter known as the "Chilson Report," was published recommending the conservation of 32 b.c.f. of helium in underground storage by the year 1975. It was anticipated then that this amount would meet peacetime national requirements (Federal agency and non-Federal) through the year 2000.

The Chilson Report contemplated greater participation by private industry and recommended Government purchase of all helium produced by privately constructed plants in the natural gas fields of Texas, Oklahoma and Kansas, three of them on Northern's pipeline system. Should private industry not be interested, construction of Government plants was recommended.

Many of the essential, basic and unique requirements for helium are discussed in the Chilson Report, a subject covered in greater detail in a later section of this opinion. Suffice it to say that the group concluded:

\* \* \* that present and foreseeable uses of helium are highly essential to the welfare of the United States—particularly with respect to its military strength—and a conservation program of the magnitude discussed herein would be justified. Failure to extract the recoverable helium that would be wasted to the atmosphere in fuel gas in the absence of a conservation program over the next 15-20 years would be gross wastage of a very limited and unique natural resource, which could have the effect of reducing or slowing down the rapid advance of scientific, technical, and military developments in this Country.

A self-liquidating program was contemplated, supported by helium sales, while at the same time providing the Nation with conservation of 32 b.c.f. in underground storage for the long-range future.

On April 15, and May 12, 1958, Northern's executives met with representatives of Interior's Bureau of Mines (the "Bureau") to discuss Northern's plans to build an integrated facility for nitrogen rejection, helium extraction and LPG recovery. At the latter meeting there was specific discussion of a helium extraction contract in anticipation of enabling legislation.

It is clear that integrated facilities were contemplated by the parties from the beginning as being to their mutual advantage. Northern proposed a plan whereby the company would build and operate a petrochemical complex processing about a billion cubic feet of natural gas a day and extracting, *inter alia*, helium and nitrogen. Compensation to the company would be based on costs and reasonable profit on investment, allocable to helium.

Henry P. Wheeler, Jr., the Bureau's Assistant Director for Helium, considered the plan to have several advantages. An integrated facility permitted maximum helium recovery from Northern's natural gas. It would result in a reasonable cost to the Government because investment and operating costs could be spread over several other end-products, rather than helium alone. The Government would not have to guarantee a supply of helium-bearing natural gas. Helium extraction would fit into Northern's overall operations. In an internal memorandum of the second conference, Mr. Wheeler noted that the plan "would avoid the necessity for the Government to undertake nitrogen removal and possibly petrochemical operations as a necessary, but basically unrelated, adjunct to helium conservation."

Plans for the helium conservation program proceeded. By April 25, 1958, President Eisenhower had approved the Chilson Report. He thereafter included legislative recommendations in his fiscal 1960 and 1961 budget messages. Interior, on August 19, 1958, publicly announced it would seek new legislation authorizing conservation through long-term contracts with private industry. Later in 1958 the Bureau, which had theretofore been the sole producer of helium, published an "open file" of technical literature on the subject of helium extraction to assist companies contemplating participation in the program. Though not required, integrated facilities were suggested by the Bureau in these words:

\* \* \* Those considering a process for helium extraction from natural gas might wish to accomplish other things, such as extraction of ethane for petrochemical processing, propane and butane as LPG, and pentanes and heavier hydrocarbons in a natural gasoline product. Such plans would, of course, call for a more complex system. Some may wish to remove nitrogen in greater quantities than would be done if only a crude helium-nitrogen mixture is removed. \* \* \*

Meanwhile Northern participated in an informal discussion with the Federal Power Commission ("FPC") concerning extraction of helium, nitrogen, and propane from its gas streams. Throughout 1958 and into 1959 it continued to investigate the possibility of participating in the conservation program. Noting that Interior was then selling helium to other Government agencies at its actual cost (without profit) of \$15.50 per thousand cubic feet (m.c.f.), and to the public for \$19 per m.c.f., Northern considered entering and acquiring a major part of the commercial market, and selling any surplus to Interior. By 1959 Northern had concluded it could successfully compete with Interior and decided to go into the helium business. In that respect, extraction of helium at various lo-

cations, in a separate helium extraction plant, and in plants integrated with other operations, were among the various possibilities considered.

In furtherance of this plan Northern, on January 13, 1959, formed a joint venture with Air Products and Chemicals, Inc., which they called Helex Company. They planned to build an extraction plant on Northern's line near Sunray, Texas. Air Products' experience in extraction of compressed gases and in the distribution of helium was important to Northern.

Discussions between Northern and then Secretary of the Interior Fred A. Seaton also continued throughout 1959 and 1960, but details had to be deferred pending passage of the basic legislation. During this period Secretary Seaton, appearing before the House Committee on Interior and Insular Affairs, testified that constantly increasing demands made it "absolutely necessary to engage in a program of conservation of this utterly irreplaceable natural resource."

Late in 1959 Northern decided to forego the private market opportunities in helium. It concluded that a long-term conservation contract, as contemplated by the Government, would enable it to integrate its proposed helium, LPG and petrochemical facilities. With a single buyer it no longer needed Air Products' marketing experience and brought out the latter's 40 percent interest in Helex Company. In 1962 the name of this wholly owned subsidiary was changed to Northern Helex Company ("Helex").

By January 18, 1960, Northern's plans for extensive diversification had crystallized. An internally developed master plan outlined an interrelated and interreliant complex for extraction of helium and LPG products at Bush-ton. Consulting engineers were engaged to investigate various alternatives. The problems of transportation of ethane



from Bushton to proposed ethylene plant locations were considered. Specific attention was given to the extraction of the inerts, nitrogen and helium, so as to maintain the B.t.u. value of the natural gas downstream of Bushton. By June 1960 emphasis centered on initial construction of an LPG plant designed (at increased investment) to permit the later addition of ethane and helium facilities.

It was planned to defer ethane extraction for the time being and to proceed initially with construction of LPG and helium facilities. Plans for the petrochemical complex would, in turn, depend upon the successful operation of the LPG and helium complex at Bushton. During the first half of 1960 Northern formed a wholly owned subsidiary, Northern Gas Products Company ("Gas Products") as its instrumentality for extraction and marketing of propane, butanes, natural gasoline, and other hydrocarbons from its natural gas streams.

That the Government was also thinking in terms of integrated facilities is further evidenced by an internal memorandum of February 11, 1960, prepared by Interior's Mr. Wheeler in preparation for a congressional appearance on the proposed helium legislation. In it he notes that it was anticipated that private industry would integrate its helium and other operations to permit extraction of ethane and other hydrocarbons, and removal of nitrogen to upgrade the heating value of the residue gas.

#### *Legislative Background of the Helium Conservation Program*

On February 19, 1960, Representative Walter Rogers (Texas) introduced H.R. 10548 which eventually was enacted as the Helium Act Amendments of 1960 ("1960 Helium Act"). It was substantially similar to Interior's legislative proposal also presented that day. Both proposals were based on the Chilson Report.

The 1960 Helium Act was enacted as an amendment and revision of the Helium Act of March 3, 1925, previously amended in 1927 and 1937, and it was signed into law by President Eisenhower on September 13, 1960, to become effective March 1, 1961.

Bureau predictions of increasing helium requirements, leveling off at 2 b.c.f. annually by the year 2000, had been presented to Congress during its hearings. When H.R. 10548 was reported to the full House, it was stated, *inter alia*, that then current consumption of helium was 80 times the 1937 level, 70 percent of that consumption being by the Department of Defense (DOD), the Atomic Energy Commission (AEC), the National Aeronautics and Space Administration (NASA), and other Federal agencies. The report observed:

The upward trend in helium demand is expected to continue into the future. Many present-day uses, including those in the missile, nuclear energy, and industrial fields, are in early stages of development. Other uses, involving extremely low temperatures in the region of absolute zero, are still in the research laboratory. Temperatures within 20° of absolute zero cannot be attained without helium.

It was further noted that helium wasted in fuel gases from the few fields with commercial quantities of helium, was being wasted at 10 times the rate it was being currently consumed. If this waste were continued, helium-bearing gas sources in the United States would not meet national needs after 1980-85.

The report made mention of a section 14 of the bill, added in Committee which "emphasizes the need to foster individual initiative and avoid Government monopoly in helium production and distribution as the volume of helium produced and consumed increases, and declares that Government operations under the act should, with other



sources, be on a scale sufficient to assure a sustained supply of helium for essential Government activities."

Section 14, later enacted as section 15, had been introduced by Representative Stewart L. Udall (Arizona) on behalf of his constituents, as confirmed by later discussion of the bill on the House floor, to insure that the program for production, storage and distribution of helium did not remain, or become, a Government monopoly, and to foster and encourage private enterprise. The Pinta Dome region in Arizona was thought to contain nonwasting (unsuitable for fuel gas) high helium content reserves.

The use of the phrase "essential Government activities" at the end of section 14 had no particular significance, and it was not mentioned in Committee. It had not appeared in the bill prior to the amendment offered by Representative Udall. He testified at trial that he employed the phrase only because helium in the defense effort was significant, and he wanted to support passage of an amendment insuring greater involvement by the private sector by linking it with defense needs. He did not believe his amendment in any way limited the purpose of the bill to conservation of helium solely for the benefit of certain specified Government agencies, nor did it detract from the basic purpose of providing a broad, long-range conservation program for all national purposes. Defendant's present argument that the general "purposes of the Act" (words employed later in contract provision 12.1) were limited to supplying only the long-range requirements of certain specified Government agencies is not supported by the record. That purpose is stated as a minimum purpose of the act, in the context of assuring the participation of private industry.

In a section-by-section analysis, the report cites section 4 as directing all Federal agencies to purchase their "major requirements for helium" from Interior, and as author-

izing the latter to sell helium for "Federal, medical, scientific and commercial uses" as the Secretary may approve.

Floor debate began on May 2, 1960, and concluded with passage of the bill by the House that same day. Debate was consistent with the Committee report, stressing the importance of helium, and the necessity of conserving a precious natural asset. Representative John P. Saylor (Pennsylvania) stated, in urging passage, as a member of the committee:

The purpose of this bill is to see to it that this great natural asset, which is irreplaceable and is now being wasted into the atmosphere, will be preserved and conserved for the use not only of the agencies of Government but for all of the people of the United States. \* \* \*

In a similar vein, Representative J. Floyd Breeding (Kansas), sponsor of an identical bill, stated:

The conservation program \* \* \* has been developed carefully over about a 2-year period, with the assistance and cooperation of many informed persons in Government, science, and industry. It calls for private industry to participate through financing, building, and operating helium plants, but it does not overlook the Government's dominant interest and responsibility for assuring the success of the program.

\* \* \*

\* \* \* [I]t is imperative that we take advantage of the opportunity we now have to save this helium to meet the defense and technologic needs of future generations.

And Representative Rogers, the bill's sponsor, observed that the bill would hurt no one.

\* \* \* As a matter of fact, everyone can be helped by it, not only the Department of Defense, not only the country as a whole, but, actually, the user of the gas of which helium is a component deposit. \* \* \*

We are going to need it in much larger quantities in the future than many anticipate at this time. [14]

Senate Committee hearings on H.R. 10548 were held on June 1 and 15, 1960,<sup>15</sup> and were to the same effect. There was no specific reference to the latter portion of section 14 but rather the discussion emphasized the broad purposes of the act. A colloquy between Senator O'Mahoney and Interior witnesses is illustrative. Under Secretary Elmer F. Bennett, in speaking of the growing "private" use of helium, testified that "the time may come when helium will be going into unessential uses \* \* \* and at that point we believed that there should be a reserved license authority to direct the flow of helium into the essential uses, as distinguished from the nonessential uses." Mr. Wheeler expanded on this testimony, stating:

\* \* \* Most of the helium that is used today, the two largest uses, are the missile program and the atomic energy program. The space program is a growing and very important use of helium.

There are also very important new developments in the field of cryogenics at extremely low temperatures. We think all of these uses will expand in the future and that new uses will be found for helium

<sup>14</sup> Former Representative Walter Rogers testified at trial to the same effect.

<sup>15</sup> The Senate also considered a similar bill, S. 3376, sponsored by Senator Gordon Allott (Colorado).

that we do not even contemplate at the present time. [16]

In reporting to the Senate on June 30, 1960,<sup>17</sup> the Committee added that:

\* \* \* The long-term contracts contemplated under this act would make it feasible for private industry to negotiate with banks and other financial institutions for the capital necessary to build separation plants. \* \* \*

The long-range objectives of the act were emphasized by Interior's witnesses before the Congress.<sup>18</sup> Interior had been authorized subsequent to 1936 to produce and sell helium for Government and non-Government uses, and to conserve only its excess production in the Cliffside storage area. With these amendments, it wanted broadened authority to purchase helium for long-term conservation. It had

<sup>16</sup> Former Under Secretary Bennett testified at trial that he viewed the last part of section 15 (formerly 14) as a reservation of the "Federal market" (both Government agencies and their contractors) for Interior rather than private sellers, to insure the self-liquidating feature of the act. He did not view section 15 as a limitation on the purposes for which helium was to be conserved, as a wasting asset, for future national needs, but rather as a limitation imposed on the "Federal market."

Before the House subcommittee he had testified:

"\* \* \* We have received expressions of concern about the future of helium from some of the country's leading scientists \* \* \* as well as from many leaders in industry who can foresee a continuing need for the physical properties afforded by helium alone of all the elements."

<sup>17</sup> S. REP. NO. 1814, 86th Cong., 2d Sess.

<sup>18</sup> Before the Senate Committee Mr. Wheeler testified that the bill "certainly broadens the scope of the program immediately, from meeting current demands primarily to one of long-range conservation objectives."



estimated at the congressional hearings that by about 1985 annual demand would start exceeding supplies from all known sources. Without conservation there was expected to be only about 35 b.c.f. in known helium resources by 1985; but with conservation of about 52 b.c.f. at Cliffside, a total of 87 b.c.f. would be available.

Nor did Interior feel that supply and demand would move at constant rates or that the program was expected to respond to the short term. As Under Secretary Bennett testified:

It would be foolish for anyone to believe that our helium resources will decline and the demand for helium will increase at exactly the rates predicted in the foregoing charts. It is an inescapable fact, however, that our resources are being depleted at a rapid rate and that our need for helium is increasing year by year.

Perhaps the known resources will be capable of meeting our needs to 1995 or the year 2000, instead of 1985 as predicted in our estimates. At some time in the future, we will surely need the helium that is being wasted today.

Finally, Interior witnesses testified before Congress that the Government would have to sponsor the long-term conservation program because it was economically disadvantageous for private industry to do so on its own.

Relevant provisions of the act, as signed by the President September 13, 1960, are section 3 authorizing the Secretary to enter into contracts not exceeding 25 years to acquire helium or, in the alternative, to acquire helium or helium-bearing natural gas by eminent domain; section 4 authorizing the Secretary to construct and operate helium plants; section 5 authorizing the Secretary (following a determination by the President) to license sale and trans-

portation of helium in interstate commerce; section 6 requiring Government agencies to purchase all major helium requirements from the Secretary, and authorizing sales to others as the Secretary may determine with provision for repurchase if needed for Government use; and section 15 entitled "Individual enterprise in developing helium" fostering such enterprise in the development and distribution of helium. Only in the last mentioned section does the phrase "essential Government activities" appear.

It is concluded that the overall purposes of the Helium Act Amendments of 1960 were to establish an effective long-range helium program for the conservation of this important natural resource to meet national needs in the long-range future when reserves would be inadequate to meet demand. Within this overall objective, the Helium Act Amendments of 1960 were intended to cover a number of more specific objectives. One of the specific purposes of the act was to assure a sustained supply of helium for essential Government needs, as a minimum, and those needs had a priority. There is no evidence that the phrase "essential Government activities" was intended to limit the purposes of the act to supplying the needs of the specific Government agencies then using helium, to the exclusion of other Government agencies which would in the future be concerned with helium. Nor is there evidence of an intent to distinguish Government (that is, agency) needs from national needs, nor to differentiate between the Government, and the needs of industries on which the Government and the Nation depend, except to insure that essential Government needs were met at the minimum.

It was also a purpose of the act to supply helium for medical, scientific, and commercial uses not then readily foreseeable. Another purpose of the act was to prevent the continued waste of this valuable natural resource in fuel gas being produced in the Hugoton-Panhandle fields, which contained about 90 percent of the Nation's helium



reserves. Still another important purpose of the act was to establish a helium conservation program that would pay for itself and still provide for the storage of 40-50 b.c.f. of helium by 1985 for national needs. Finally, a purpose of the act was to encourage and expressly provide for participation by individual enterprise in the development and conservation of this country's helium resources.

### *The Contract Negotiations and the Contract*

In a news release of September 14, 1960, the day after the act was signed, Secretary Seaton outlined Interior's plans for implementing the long-range helium conservation program. It was designed, he announced, to conserve for future use about 62 b.c.f. or irreplaceable helium necessary to the Nation's defense and industrial development. Because it was anticipated that costs would vary with location, the reasonableness of bids to be invited from private industry were to be measured against the estimated cost to the Government of producing the helium, plus allowances for interest on investment, taxes, insurance and profit. Interior desired minimum investment plants without standby equipment, excess capacity or other unnecessary embellishments.

A report of July 8, 1960, to Northern prepared by Fluor Corporation ("Fluor"), an engineering construction firm, had recommended initial construction of an LPG plant with provision for later addition of ethane and helium recovery and nitrogen removal and so designed that helium-rich natural gas could be segregated and fed to the helium plant, thereby minimizing its size. In the late summer of 1960, Northern's subsidiary, Gas Products, contracted with Fluor for construction of the LPG plant at Bushton, incorporating facilities permitting future recovery of ethane.

In a supplement to its July 8th report, Fluor on September 15, 1960, provided the design of a helium recovery plant to be constructed adjacent to the LPG complex. It would process the helium-rich stream exiting from the LPG plant, and be designed to reject 12 million standard cubic feet per day of inerts (helium and nitrogen) by extracting helium and segregating a low B.t.u. fuel stream comprised of nitrogen and methane. The latter would supply the helium plant's fuel needs and part of the LPG plant's fuel needs as well. The steam systems of the two plants would be tied together and, in addition, the helium plant would use certain utilities supplied by the LPG plant, including electric power, propane refrigerant, treated water, the cooling tower, make-up water and instrument air.

About the same time the Bureau's director, in an internal memorandum to the Under Secretary, noted that a factor to be considered when determining whether or not to build Government plants was that some of the private participants "would integrate helium extraction with nitrogen removal, ethane extraction, and other operations not independently feasible," thus aiding the national economy and better utilizing the ingredients in natural gas.

Interior and Northern embarked upon formal contract negotiations February 23, 1961. They were concluded with the execution of a contract August 15 between the Government acting through Interior, and Northern acting through its wholly owned subsidiary, Helex.

An experienced, highly competent, negotiating team represented Interior headed by the earlier-mentioned Mr. Wheeler. It included the Bureau's Chief of Property Management, Chief Petroleum Engineer, General Manager for Helium Operations and Chief of Helium Resources. At that time Interior had accumulated 40 years of exclusive experience in the building and operating of helium plants

In preparation for negotiations, Bureau engineers developed information concerning availability of helium-bearing natural gas in various fields and pipelines, selected possible extraction plant locations, and estimated the comparable costs of constructing and operating Government plants at those locations. An outside consultant was retained to develop a method of relating plant costs to plant size and other variables, permitting Interior to evaluate and compare cost features of proposals from private corporations. Legal support was provided by the Office of the Solicitor of Interior. This was the team which negotiated with Northern and the three other companies selected out of 14 which had submitted proposals.

Interior decided to employ the negotiation, rather than the competitive bidding, method of award. It was concluded this could permit maximum conservation of helium because Interior could select specific helium-rich gas sources being rapidly depleted to supply fuel markets; it could evaluate the speed with which interested companies could move to plant completion; and it could take into account a number of technical factors affecting costs, which vary with location.

At the first formal negotiating session on February 23, 1961, Mr. F. C. Nicholson, Northern's vice president and chief negotiator, advised that his company was in the process of building an LPG plant at Bushton and would be able to offer a multipurpose plant which would extract helium, liquids and nitrogen, thus permitting a price advantage to Interior. On March 30-31, the second meeting, Northern advised Interior that the Bushton plant was a liquids recovery plant; that the helium extraction plant would be fully integrated with it; and that petrochemical facilities might be constructed and added in the future. Draft contracts were exchanged by both sides and on May 16, 1961, Mr. Wheeler sent a memorandum to the members of Interior's negotiating board discussing terms of the

draft. In that memo he recognized that helium extraction facilities would, in most cases, be fully integrated with other facilities of Northern.

The Government's prime concern was what it would cost to build and to operate a Government "grass roots" plant (one independent of all other operations) at the contractor's site. Interior's engineers estimated that the Government's plant investment would be \$22-23 million at Northern's site, based on the plant size and gas supply contemplated. It calculated unit costs for extraction and added thereto typical industry costs such as interest, taxes and insurance. An allowance was added for profit at 6½ percent on the unamortized total investment over a 20-year period, although an actual return of up to 13 percent on equity funding was contemplated by Interior's negotiators. To cover the value of the helium in natural gas, a processing fee of \$2 per m.c.f. of recoverable helium was also added. That was the price the Government was paying for helium-bearing gas at its Keyes facility.

Interior's estimate of the cost (without profit) of extracting helium in Government-owned plants was \$15 per m.c.f. and, if negotiations with private industry within that range were unsuccessful, it was prepared to initiate condemnation proceedings and to construct and operate Government facilities. As it entered upon negotiations with Northern, it hoped to negotiate a contract price of \$11.08 per m.c.f. Northern was prepared to start at \$12.50 per m.c.f., and to go no lower than \$8.50.

The final price negotiated was \$11.24 per m.c.f., which both negotiating teams considered fair and reasonable. It was divided into two parts. Part 1 of the initial price was established at \$0.47 per m.c.f., representing the portion of joint costs allocable to exploration, production, gathering, extraction, processing, compression, transportation, and storage allocable on a volumetric basis to the contained



helium. Part 2, in the amount of the balance of \$10.77, was to be periodically adjusted for inflation or deflation, in accordance with a prescribed formula keyed to the wholesale price index for all commodities, exclusive of farm products and food.

In addition, if Helex were required to pay to unrelated third parties (landowners and producers) amounts in satisfaction or settlement of claims by such parties to the helium contained in the Hugoton area natural gas, the contract provided that the Government would reimburse Helex to the extent that such amounts exceeded 28 percent of the average of Part 2 of the contract price in effect during the time covered by such claims.<sup>19</sup>

The helium gas mixture to be delivered under the contract was to be about 60 percent helium, and it therefore required purification by Interior. At purification costs of \$2-3 per m.c.f., the total initial Government cost of buying and purifying helium delivered by plaintiff was \$13-14 per m.c.f. Prior to November 1961, the Bureau had been selling purified helium to Federal agencies at its actual costs of \$15.50 per m.c.f. The price to non-Federal users had been \$19. After November 1961, the Bureau sold purified helium to all at \$35 per m.c.f., a price which the Chief of the Bureau's Helium Activity deemed reasonable, and a price which would support the self-liquidating features of the helium conservation program.

In the early 1960's when private producers first entered the market, they also sold purified helium at about \$35 per m.c.f., but by 1966 their competitive price had dropped to \$25.

The limited termination provision 12.1, earlier quoted, was the subject of intensive negotiations. Interior negotiated the provision with the intent of reserving an option

<sup>19</sup> The contract provisions relevant to these contingent claims are set forth in finding 93.

to terminate only if continuation of this long-term program was clearly no longer in the public interest or if it did not make any sense to continue conserving helium, for example, large new natural resources were discovered, or the need for helium became non-existent. This is illustrated by Mr. Wheeler's testimony at trial, and in a deposition before trial, introduced into evidence at trial:

\* \* \* My concern with regard to the termination provision was that the government not be locked into contracts which for any reason would not—for any reason would not be in the public interest.

\* \* \* \* \*

But we had to provide for the possibility that something might happen which would make the contracts clearly no longer in the public interest. \* \* \*

So my concern, whether or not it is expressed in that contract, was a very broad concern that the government not be locked into contracts which would clearly not be in the public interest for some reason.

\* \* \* If \* \* \* something would happen, that it just didn't make sense if there was no demand for it, that we also wouldn't be locked in to saving something for no useful purpose.

In the same vein, Marling T. Ankeny, Director of the Bureau, described the provision in a memorandum of September 8, 1961, as follows:

Under paragraph 12.1, it was the intent of the parties to provide for termination under circumstances that would make continuation of the program undesirable in the public interest. The two specific items



listed are of that nature. There was no intent to provide for arbitrary termination by the Government.

Nor was it contemplated, as plaintiff proceeded to fulfill the objectives of the contract, that partial achievement of those objectives would constitute grounds for termination. Interior expected to purchase and store all the helium that plaintiff was obligated to produce and supply under the contract. Nor did it intend that accomplishment of another of its anticipated contract objectives, the development of technology permitting extraction of helium from leaner sources, would constitute grounds for termination. When asked if he contemplated using improved technology developed under the contract as a ground for terminating the contract, Mr. Wheeler replied:

I have to answer your question no. We contemplated that they would do that and we wanted them to do that, and certainly we didn't contemplate that if they did what we intended for them to do in the contract it would be a cause for terminating the contract.

Northern's intent was in accord. During the protracted negotiations on the wording of this provision, Northern sought a very specific and limited termination right on the part of the Government. It contemplated a long-term contract and based its plans to integrate the helium plant closely with the LPG facility, and later with petrochemical operations, on that fact.

In the course of negotiations, Interior actually considered continuing the conservation program beyond the end of the original 22-year term, and after execution of the agreement, it gave consideration to enlarging the program subject to appropriation of additional funds by Congress. Interior, during negotiations, continued not only to contemplate the use of integrated facilities for the mutually beneficial reasons earlier mentioned but, as Mr. Wheeler

testified, "deliberately made it possible" through paragraph 31.3 of the contract.<sup>20</sup> Integration of facilities was considered by Interior's General Manager for Helium Operations to be the principal incentive to private helium contractors, and a means of providing lower price to Interior, and stimulating technological advances. Furthermore, a high Federal investment would be avoided, and the states would realize additional taxes from privately owned and operated plants.

It is clear from the record that, in their negotiations, both parties expected the contract to run for its entire 22-year term. Both considered termination under the limited circumstances spelled out in provision 12.1 to be a "remote possibility."

Moreover, it was assumed that the discovery of new natural helium resources would have to be "large," or the diminution in helium requirements "substantial," viewed in the long-range perspective of a conservation program, before termination would be warranted. It was Mr. Wheeler's understanding of the act that its purpose was to conserve helium for essential Government and non-Government activities, and no distinction was made during negotiation of the termination provision. The words "substantial diminution in helium requirements" in provision 12.1 were intended to refer to long-range requirements of the Nation as a whole.

His objective during negotiations was to conserve as much helium as possible within the budgetary allocation for use in the long-term future beginning at a time which could not be estimated with precision. Historically, there had been temporary periods of decreased helium demand

<sup>20</sup> "In connection with Seller's plant, Seller at its sole risk, cost and option may construct and operate, or cause to be constructed and operated, facilities for extracting products other than helium from the natural gas processed through said helium plant."

in the past, and the negotiators did not intend that such temporary declines would support a decision to terminate.

On June 20, 1961, a contract in the form negotiated by Northern was submitted to Helex's board of directors, and approved for execution by its officers. Thereafter, on July 6, the board authorized a contract with Fluor for actual construction of a helium extraction plant near Bushton. An internal report of August 4, 1961, presenting the agreement with the Government to Northern's board of directors for ratification, stated that the unit price of \$11.24 per m.c.f. would yield a 12 percent after tax return on equity investment. Projects had to earn that rate of return to secure approval by Northern's board. The report also proposed an initial 57/43 debt to equity ratio to finance the plant, the debt portion to be in the form of 5 percent bonds, with redemption starting after 2 years.

On August 3, 1961, an appropriation bill became effective authorizing Interior to enter into helium procurement contracts with fiscal payments limited to \$47,500,000. It further authorized borrowing from Treasury of up to \$10 million for the program.

The contract was signed August 15, 1961, by Mr. Ankeny, Director of the Bureau, on behalf of the Government, and by Mr. Nicholson, vice president of Helex. It was also approved by Secretary Udall. In essence it provided that plaintiff would tender all the helium gas mixture produced in its plant and the Government would pay for the volumes tendered "whether taken or not," up to an annual dollar limitation of \$9,500,000.<sup>21</sup> Actual deliveries were to begin not later than January 1, 1963. The term of the contract was 22 years. Delivery was to be made at a point where the pipeline, to be furnished by the Government, connected with Helex's measurement facilities at its plant, from whence it would be taken to the Cliffside storage reservoir near Amarillo, Texas.

<sup>21</sup> With a Government option to exceed this amount.

It was Secretary Udall's understanding when he signed and approved plaintiff's contract that Interior was contracting to purchase helium for the long-range needs of the country as a whole, including Government, commercial, technological, scientific, or any other use then known or thereafter developed.

Later in 1961 Interior entered into similar contracts with Cities Service Helex, Inc., National Helium Corporation, and Phillips Petroleum Company, at initial contract prices of \$11.78, \$11.78 and \$10.30 per m.c.f., respectively. The weighted average initial price on the four contracts was \$11.29 per m.c.f.

#### *The Nature and Degree of Integration of Plaintiff's Facilities*

By December 7, 1962, deliveries of helium under the contract had begun. Northern had constructed an industrial complex at Bushton comprised of two plants, the LPG extraction facility operated by its subsidiary, Gas Products, and the helium extraction facility operated by its subsidiary, Helex. The earlier projected ethane extraction plant was added by Gas Products in 1969.

These three plants are totally integrated, both technologically and physically. By way of general summary, natural gas from Northern's pipelines enters the LPG facility where it is processed and cooled, and propane, butane, isobutane and gasoline are extracted. One of the functions of the LPG plant is to precondition the feed stock for subsequent processing in the ethane and helium facilities by removal of the heavy constituents, and cooling and dehydration of the gas stream. Gas leaving the LPG plant enters the ethane extraction facility which, *inter alia*, further prepares the feed for the helium plant by reducing the volume to be accommodated, and cooling and dehydrating it. The residual gas enters the helium plant where it is split between helium and a low B.t.u. gas stream which



is returned to the ethane plant for use in its boilers, thereby effecting nitrogen removal. The balance is returned to Northern's pipeline for transmission to its fuel customers.

The utilities at the three plants are also fully integrated at the Bushton complex in the interest of efficiency, reliability and safety. This interdependence and interrelationship was planned from the outset with the design of the LPG facility, the first of the three to be constructed at Bushton.<sup>22</sup> When built the latter was the largest such extraction plant in the free world.

Details of the LPG process are set forth in the findings.<sup>23</sup> The gas stream exiting from the LPG plant was originally piped directly to the helium plant. After the ethane plant came on stream, it was piped to the ethane plant, and thence to the helium plant. It is technologically necessary to remove liquid hydrocarbons and any water present from natural gas in order to process it for helium extraction. The LPG plant accomplishes these functions in a number of processes which would otherwise have had to be provided by the helium plant. The helium plant represented an initial capital investment of \$11,500,000. Had it been built independently of the LPG plant, it would have initially cost \$4,596,500 more.

The ethane extraction process is, in turn, integrated with both the helium plant and the LPG plant.<sup>24</sup> It is de-

<sup>22</sup> Operation of the LPG plant was delayed until December 28, 1962, awaiting approval of the FPC under its jurisdiction over natural gas transmission. Approval was granted conditioned upon a reduction of rates to fuel customers, coupled with delivery of increased volume, to balance the lowered B.t.u. value resulting from extraction of LPG products. Until FPC approval, the helium plant operated at a reduced level.

<sup>23</sup> Nos. 107-08.

<sup>24</sup> As detailed in finding 119.

signed to accept the helium-rich residue exiting from the LPG plant, extract methane and ethane and to pipe further-enriched helium-bearing gas at  $-30^{\circ}\text{F}$ . to the helium plant as its feed. Other residue is recycled to the LPG plant for further extraction of LPG products.

Positioning of the ethane plant at this stage of the complex at Bushton furnished several advantages. The removal of additional volumes of heavier components upstream of the helium plant resulted in an approximate 20 percent decrease in the volume of gas the helium plant then had to process,<sup>25</sup> substantially decreasing the helium extraction cost. The ethane plant also better prepared the helium plant feed gas by stabilizing feed conditions. The helium plant was sensitive to these conditions and prone to shutting down if they varied. The ethane plant also extracted trace amounts of products missed in the LPG extraction, and it dehydrated the helium plant feed, helping to prevent freezing problems thereafter.

There were disadvantages in this arrangement relative to positioning the ethane plant elsewhere and downstream of the helium extraction, in that it increased the ethane plant's size and investment. It had been concluded that the advantages outweighed the disadvantages.

The helium extraction plant is a huge facility employing cryogenic techniques which represented a substantial advancement in the state of the art. By way of example, much leaner gases were used as a feed stock for helium extraction, and much larger quantities were processed each day than had ever been processed before. Advanced heat exchangers were developed, a single train process was used for the first time on such large volumes and, for the first time, cryogenic extraction processes were used for such large volumes following an oil absorption process as employed in the LPG plant. In sheer size, the

<sup>25</sup> From about 470 to 410 million cubic feet (m.m.c.f.) per day.



helium facility was scaled up 20 times larger than any that had ever been built before.

Helium extraction is accomplished by a process described in detail in the findings.<sup>26</sup> Very simply stated, three refrigeration stages were employed. Each involves a flash column containing a series of chambers—seven in the first stage, three in the second, and four in the third. Dehydrated and filtered gas under pressure is drastically refrigerated, eventually to  $-295^{\circ}\text{F}$ . The cooling causes part of it to liquefy. As it passes from chamber to chamber, trapped gas in the liquid is released by sudden drops in pressure.<sup>27</sup> Liquid remaining at the conclusion of the first two major stages is piped back to Northern.

The gas from the first chamber of the last flash column (the third refrigeration stage), containing approximately 72 percent helium and 27 percent nitrogen, is the helium gas mixture piped to the Government.<sup>28</sup> The liquid remaining in the last chamber of the last stage contains approximately 0.01 percent helium, 73 percent nitrogen and 26 percent methane. It is withdrawn as the low-B.t.u. fuel burned in the ethane plant, in boilers specially designed to handle such a high nitrogen, low-B.t.u. stream, and dispose of the nitrogen. Thus nitrogen segregation is intimately involved in the helium extraction process. Its removal balances out the removal of ethane, maintaining the B.t.u. value of the gas downstream of Bushton.<sup>29</sup> In

<sup>26</sup> See Nos. 110-11.

<sup>27</sup> As gas in a carbonated beverage is released when the cap is removed.

<sup>28</sup> Gas in the second and third chambers is recycled to the first chamber in order to extract the maximum amount of helium.

<sup>29</sup> On December 11, 1967, the FPC approved Northern's application describing this procedure. *Northern Natural Gas Co.*, FPC Findings & Order, No. CP68-5.

this way the helium plant serves a function essential to the ethane plant, as the latter and the LPG plant serve functions essential to the helium extraction facility.

This advanced technology was not achieved without cost. Major problems were encountered during the period 1962 through 1966 before full operating continuity and efficiency were achieved. Many times during that period the helium facility froze up and shut down, requiring a week each time to defrost. Other major problems developed in this new technology and were resolved.

On October 17, 1963, two explosions occurred causing personal injuries and property damage; and another occurred on February 21, 1964. In one 11-month period, October 1, 1962 to September 1, 1963, there were 21 shutdowns, 11 due to problems in the helium plant. Because of the total integration of facilities at Bushton, each processing step is closely toleranced to the designed output of the previous step, and a shutdown in any part of the chain causes cessation of activity in the subsequent steps. The LPG steps must be completed before either the ethane or helium plants can produce. The helium steps must be completed before the ethane plant can produce, and facilities at other locations rely on the production of the ethane plant. If an initial step is shut down resulting in a loss of all activity at Bushton, it takes about 75 hours, after correction of the problem, for startup and return of the complex to full production. While operating continuity and design efficiency were eventually achieved and the technological advances proved out, they were achieved at the risk and expense of plaintiff under its fixed-price contract with Interior.<sup>30</sup>

By the end of 1966 the helium and LPG plants had proven themselves, and Northern proceeded with the third phase of its original overall diversification plan. On March

<sup>30</sup> See contract provision 31.3, note 20 *supra*.

23, 1967, Northern Petrochemical Company ("Petrochemical") was incorporated as a wholly owned subsidiary of Northern to develop an ethylene petrochemical complex in Joliet, Illinois, fed by the ethane extracted at Bushton and piped to Joliet via another subsidiary's pipeline. Later that year Northern acquired three companies which became divisions of Petrochemical, providing the latter with marketable end products to be produced from its ethylene-derived chemicals. Thereafter, Northern acquired four more plastic conversion companies as divisions of Petrochemical. Plans were also developed for a plant to be completed in 1971 to derive ethylene from ethane. In the meantime, ethane from the Bushton complex was converted into ethylene under contract with another company for use by Petrochemical.

The Petrochemical facility was completed and in operation on a 940-acre site in Joliet by September 1971. This olefins plant is designed to produce 800 million pounds of ethylene and 200 million pounds of propylene each year from Bushton feedstocks, including 204,500,000 gallons of ethane. These feedstocks from Northern's pipeline system represent 78 percent of the manufacturing cost of ethylene and propylene. As presently designed, the plant at Joliet cannot operate on other than Bushton feedstocks, although it could be modified at an estimated cost of \$35 million, and with a 2½-year delay, to process feedstocks consisting of heavier hydrocarbons than those produced at Bushton. In that respect the complex at Joliet is somewhat integrated with the LPG, ethane and helium facilities at Bushton, although to a lesser extent than are the three Bushton facilities with one another.

In the early 1960's Gas Products constructed an underground storage field at Bushton, and product pipelines from Bushton to Des Moines, Iowa, and Wichita, Kansas. The storage wells involved an initial capital investment of about \$5 million. Expansion of these storage facilities

to accommodate the ethane operations, in addition to producing growth in other liquids marketing, increased the initial storage investment from about \$5 million to about \$12 million. The pipeline and related pumping and storage, and the six terminal facilities in five states entailed an initial capital investment of about \$20 million. In October 1966 Gas Products filed with ICC for common carrier status and created Hydrocarbon Transportation, Inc. ("Transportation") as a wholly owned subsidiary. Transportation now owns and operates all of that pipeline system as a common carrier. Construction by Transportation of a multiproducts pipeline from Bushton to Petrochemical's plant near Joliet began in 1968. As a result the capital investment in pipeline and related facilities has increased from the initial \$20 million to about \$84 million. The storage and pipeline system assures Petrochemical of a supply of feedstocks of the proper type.

All of these integrated operations are in implementation of Northern's original plans and the wholly owned subsidiaries are the instrumentalities through which they have been accomplished. A contract between Helex and Northern dated July 28, 1961, states that Helex will, for a term of 22 years (the term of its contract with the Government) accept up to 500 m.m.c.f. per day of Hugoton area gas and extract helium therefrom, redelivering the remainder (including the low-B.t.u. stream piped to the ethane plant) to Northern. Pertinent provisions of the contract are set forth in the findings,<sup>31</sup> including a provision mutually absolving the parties in case of a failure to deliver or to receive the Hugoton natural gas enumerated reasons such as accident, fires, floods, strikes, etc., or "any other cause beyond the reasonable control of the party failing to deliver or receive gas \* \* \* provided, however, such party shall promptly and diligently take such action as

<sup>31</sup> No. 126.



may be necessary and practicable to remove the cause and resume the delivery or receipt of gas as the case may be \* \* \*."

There is a similar contract between Northern and Gas Products. Because of the services provided to one another by the subsidiaries at Bushton, costs are allocated based on the process supported thereby, in accordance with a plan developed for Northern by the engineering consultant firm of Purvin & Gertz in March of 1962, and reviewed periodically thereafter.<sup>32</sup>

As earlier described, nitrogen removal is so intricately involved in the helium extraction process that the cost of operating plaintiff's plant would be substantially the same whether plaintiff continued to produce and tender helium to the Government under this contract, or modified the plant to eliminate the helium extraction function. The only step which could be eliminated would be the helium recycle compressors at a nominal saving of \$11,000 a year in fuel costs.

#### *The Administration of the Helium Conservation Program*

During administration of the contract, Interior continued to view the program as it had in recommending the underlying legislation and in negotiating the contract, namely, as one for conservation of helium for long-range national requirements. This purpose was manifest when it was seeking appropriations, reporting on the program to Congress, and in public pronouncements. For example, when justifying Interior's appropriation request for fiscal 1964, Acting Secretary John A. Carver, Jr., reported:

The helium conservation program is not a stock-piling program aimed at assuring an adequate supply

<sup>32</sup> See findings 128-30.

of helium for some predetermined uses and for some predetermined period of time. It is a conservation program aimed at curtailing the wastage of valuable natural resource in order that the resource will be available to future Americans for whatever purpose and at whatever time it is needed. \* \* \*

In setting forth its objectives in administering the 1960 Helium Act, Interior stated in the "justification" section of its requests for appropriations for fiscals 1967 through 1971:

#### *Objectives*

A. National goal: The single enduring national objective of the Bureau of Mines helium program is to obtain maximum beneficial use of the natural helium resources of the United States.

B. Contributory goals: The Bureau of Mines helium program endeavors to achieve its national goal through the accomplishment of three subsidiary objectives.

1. The production and sale of helium for current beneficial use.
2. The acquisition and storage of helium that would otherwise be wasted in order that this helium may be used beneficially in the future.
3. Research that will contribute to a more effective utilization of the natural helium resources of the United States now and in the future.

As outlined in connection with the legislative history, the program was intended to be self-liquidating after being financed initially by funds lent to Interior by Treasury, as authorized by Congress. The borrowed funds, supplemented from time to time, were to be repaid with interest from the proceeds of helium sales within 25 to 35 years.

To accomplish this, it was necessary for Interior to retain most of the current helium market. Section 6 of the act explicitly required Government agencies to purchase their major requirements from Interior, and it was assumed that the rest of the "Federal market (Government contractors and subcontractors) would do the same.

But in late 1961, Kerr-McGee Oil Industries, Inc., began to produce helium for sale outside of the conservation program, selling to Government contractors, subcontractors, and others. Initially it sold at the same price as Interior, namely, \$35 per m.c.f. By the mid-1960's, however, additional private producers, including the three conservation contractors other than plaintiff, also began to sell excess production in competition with Interior, and their price dropped to \$25 per m.c.f. In 1967 Interior's current sales began to decline as it maintained its \$35 price, and a greater share of the current market went to private producers. The result was an estimated loss of sales of nearly \$95 million through 1972. These were sales which would have otherwise supported the self-liquidating features of the helium conservation program.

In order to stem the flow from these wounds, to some extent self-inflicted, Interior proposed regulations in October 1968<sup>33</sup> which would have required Government contractors and subcontractors (that is, the rest of the "Federal market") to buy their major requirements from Interior. However, this action was enjoined.<sup>34</sup> By August 1970 Interior had proposed the issuance of an Executive Order directing Federal agencies to require their contractors, in their respective agreements, to buy helium from Interior for use in performance of Government contracts. But efforts to terminate the program had already begun and no such Executive Order has ever been issued.

<sup>33</sup> 33 Fed.Reg. 5219-20.

<sup>34</sup> *Air Reduction Co. v. Hickel*, 420 F.2d 592 (D.C. Cir. 1969).

### *Termination and*

#### *"The Opinion of the Secretary of the Interior"*

There is a nexus between these disappointing developments in the self-liquidating aspects of the conservation program, and the efforts to terminate it. During 1969 the Bureau of the Budget ("BOB") selected the helium conservation program as one which could be eliminated to save money. It was BOB's opinion that the contracts were no longer necessary and that the program should be canceled unless its budgetary impact could be substantially reduced.

A study conducted by Interior in 1969 and 1970 (surveying helium uses, conservation goals, legislation, and future supply and demand) concluded that the problems were primarily financial and could be solved; that the conservation program was still required; and that the contracts should be continued, although on a modified cost basis. This was the position maintained by Interior throughout the year 1970, and up to the point that termination notices were dispatched, as hereinafter detailed.

In its report of March 5, 1970, responding to a congressional inquiry, Interior forecast high, median and low estimates of helium requirements through the year 2000. Using 1968 demand as a base, it was predicted that domestic use would rise steadily from the high 700 m.m.c.f., the median 650 m.m.c.f., and the low 650 m.m.c.f. estimates for 1970, to 3.6 b.c.f., 2.5 b.c.f., and 1.4 b.c.f. estimates respectively in the year 2000. Total domestic uses between 1970 and 2000 were estimated respectively as 70.58 b.c.f., 52.23 b.c.f., and 34.36 b.c.f.

Even the high estimate was deemed conservative because it did not take into account new scientific or technological breakthroughs and developments but simply expansion of then known technology, and the normal growth of then



known applications. In fact, the low estimate assumed that a future technological breakthrough might develop a lower cost substitute for helium.

The largest end use predicted for the year 2000 was for cryogenic applications, essentially in generation and transmission of electric power, cryogenic research and magnetic levitation. It was expected to rise from 47 m.m.c.f. in 1968 to between 450 and 800 m.m.c.f. by the year 2000. Use for purging and pressurizing, principally in the space program, was estimated to go from 340 m.m.c.f. in 1968 to between 100 and 600 m.m.c.f. by the turn of the century. The low forecast assumed a substantial diminution in space exploration, and the high a continuation of the current level of space activity and some expansion.

The Office of Science and Technology in the Executive Office of the President projected higher future requirements than Interior. On March 31, 1970, it estimated for the Bureau that annual domestic demand would reach 6 b.c.f. by the year 2000, and 12.1 b.c.f. by 2030. Its report noted the possibility of very much larger uses. Reference was made to the very great potential for superconducting underground power lines, and to the fact that magnets necessary for magnetohydrodynamic and fusion generating facilities would certainly be superconductive.

In a study of the unique and essential qualities of helium, the National Academy of Sciences concluded that the "Helium Conservation Program should be carefully re-evaluated to determine if it can meet helium needs beyond the early part of the 21st century. If such evaluation leaves any question at all about the adequacy of the program, the program should be extended without delay to apply to lower concentrations of helium and more natural gas fields." After the program had been ended by the events herein-after related, the National Science Foundation, a respected Federal agency, concluded in a study it had made with

respect to use of helium in underground power transmission by superconducting cables:

The abandonment of the Helium Conservation Program is a disaster, to put it mildly.

Interior tried hard to save the program. In a memorandum of April 7, 1970, to BOB from Secretary Hickel, he made these points, *inter alia*:

(a) that the BOB arguments look only at short-term and fail "to recognize the wasting nature of the resource and its importance in the future";

(b) that the total helium consumption for fiscal year 1969 was 86 percent of that predicted and that in any event "[s]hort-term changes and variations cannot be used to predict long-term trends or emerging requirements";

(c) that the comparisons of the current levels of production and use with the volume in storage "are not valid measures of the need for helium conservation";

(d) that "[t]he program is designed to meet current needs and to provide an assured supply for increased use of helium in the future when presently known helium resources are exhausted";

(e) that, with respect to BOB's discussion about "loose" termination provisions and comparisons of continuing or terminating the program, BOB should recognize that even on a short-term basis the budget impact of terminating and having to pay \$160 to \$200 million in anticipated profits could exceed the cost of continuing the program on a reduced basis;

(f) that "[t]he helium conservation program has not been proved unnecessary \* \* \*" because, due to the limited nature of the resource and the withdrawal

of helium-bearing natural gas for fuel purposes, "there is no assurance of a continuing future helium supply";

(g) that the unique uses of helium, and its long-term future value, are being ignored by BOB;

(h) that the present problems are financial and can be solved;

(i) that the expectation that helium in the future may be available from low helium content natural gas depends on natural gas supplies not yet discovered;

(j) that the cost of extracting helium from lean streams may be \$40 to \$70 per m.c.f. as asserted by BOB but are more likely to be in the range of \$175 to \$200 per m.c.f.;

(k) that "[o]ver the long term, the present supply-demand picture indicates strongly that helium placed in storage now offers the only assured future supply for essential Government and other needs";

(l) that there have been no discoveries of helium since 1943 comparable with known helium-rich sources presently being conserved;

(m) that "[t]he supply of helium in helium-bearing natural gas beyond about 1990 is speculative";

(n) that although the magnitude of the future demand is unknown, helium has recently been used in the space exploration area, underwater exploration area, and the superconductivity area, especially with regard to power generation and transmission, and if the large-scale development of any of these areas does materialize, large volumes of helium will be required;

(o) that "[b]eneficial future returns from a continued helium conservation program should offset by far its monetary cost"; and

(p) "the helium conservation program should be continued \* \* \*."

In an additional effort to save the program, Interior initiated negotiations with the four conservation contractors in May 1970 to accomplish reduction of the contract prices. John C. Whitaker, Deputy Assistant to the President as liaison between natural resource agencies, had authorized the negotiations. By September 1970 tentative agreement had been reached with National Helium, and agreement with two other contractors looked promising. In contemplation of the success of these negotiations, Interior requested \$56.1 million from Congress for fiscal 1971 which would permit continuation of the program at reduced annual cost. The tentative agreement with National Helium was submitted to OMB (successor to BOB)<sup>35</sup> for clearance to conclude the agreement. But no response was received and, therefore, no further action was taken by Interior. As late as January 1971, when the purported termination took place, it was Under Secretary Russell's view<sup>36</sup> that these negotiations were worth pursuing.

In late 1970 Interior submitted a request to OMB for fiscal 1972 on the assumption that the program would be continued on a modified basis. But by "passback" memorandum of December 11, 1972, OMB disallowed the request, stating:

*The allowance reflects a decision to terminate the helium conservation program contracts, under the following assumptions:*

—announcement made January 1 or thereabouts, with deliveries accepted through March.

<sup>35</sup> In July 1970, it became the Office of Management and Budget.

<sup>36</sup> He was then the highest ranking official at Interior, and Acting Secretary.



—\$42 M to be requested as a FY 1971 supplemental to finance plant buyout costs. [Emphasis supplied.]

When this reply was received Acting Secretary Russell had not made any decision to terminate the helium contracts nor had Interior made any request for \$42 million as a fiscal 1971 supplement to finance plant buyout costs under contract provision 12.1 on any assumption that termination was permissible under the terms of that provision. On the contrary, by letter of December 31, 1970, Under Secretary Russell strongly appealed to President Nixon for reconsideration of OMB's disallowance of Interior's fiscal 1972 budgetary requests. He appealed only with respect to the five items he considered "most critical," and among these was the helium conservation program. In his appeal, Under Secretary Russell noted:

\* \* \* We have negotiated with the companies pursuant to the Administration's instructions, and consider continuation at the reduced payment level and reduced rate of production the most viable course of action to assure future availability of helium at least public cost \* \* \*.

\* \* \* \* \*

The continuation of the helium conservation program to recover and store helium in advance of need is the only positive assurance that helium will be available in the future to meet user needs and to solve pressing environmental problems in power generation, power transmission, transportation, industrial applications, space and marine programs, and other uses, the total requirements for which are in strong prospect of increasing.

We urge that approval be given for conclusion of our negotiations to continue the helium conservation program at the proposed reduced rate and cost, and

that the FY 1972 budget estimate of \$18,000,000 be allowed. [Emphasis supplied.]

It was in this context that plaintiff brought this suit for breach of contract: December 24, 1970, for defendant's failure to pay large amounts overdue under its contract. It continued to tender helium as an act in mitigation.<sup>37</sup> After suit had been filed, OMB on January 4, 1971, rejected Under Secretary Russell's appeal, stating:

The decision to terminate the helium conservation program contracts should be upheld; the program is no longer justified.

*The need for termination—*

The circumstances which indicate the need for termination are as follows:

- Helium sales (both Bureau of Mines sales and total U.S. sales) have dropped in every year since 1966. Total sales are 60% of what was anticipated when the program was initiated in 1960.
- Present stockpile will take care of estimated essential Government requirements (which the Helium Act Amendments were aimed at providing) through the year 2000. At current rates of consumption, the present stockpile will satisfy total demand for almost 40 years.
- Technological improvements since 1960 have reduced the cost of extracting helium from leaner gases.
- The above three points constitute "other circumstances of similar nature" within the meaning of the termination provisions in the helium contracts.

<sup>37</sup> See beginning of this opinion at note 2 *supra*.

—Since the Helium Act Amendments of 1960 were passed, there has been a discovery of a new helium-rich field with estimated recoverable helium of from 5 to 15 billion cubic feet.

\* \* \* \*

In light of the discussion above and the analysis and discussion which have taken place on this program, we believe that all of the points in the appeal have been met and that *the decision to terminate successfully withstands the appeal. The budget decision assumes that the termination action will be a Secretarial determination, with announcement in early January, that circumstances exist which satisfy the termination provisions of the contracts.* \* \* \* [Emphasis supplied.]

Under Secretary Russell understood this to mean that the final budget would reflect a budget determination that the helium contracts were to be terminated by Under Secretary Russell.

On January 6, 1971, two U.S. Senators addressed questions to the then Director of OMB, George Schultz, concerning the proposed cancellation of the helium contracts; and the Deputy Assistant to the President, John C. Whitaker, manually wrote the following note on this correspondence in referring it to the Assistant Director, OMB:

As I said you've got to talk on the hill before helium is cancelled.

Right up to the date of the purported termination on January 26, 1971, cognizant officials of Interior were opposed to the action. In memorandum of January 18, 1971, Assistant Secretary Dole (Mineral Resources) wrote Under Secretary Russell:

Regardless of the OMB decision relative to the helium program, I am of the opinion that a large assured supply of helium is essential for the future. The

decision of OMB to cancel the present contracts will, I fear, jeopardize this assurance of a future supply. \* \* \*

In an evidentiary deposition of January 23, 1973, the Assistant Secretary testified that he was still of the same view.

Harold Lipper, Chief of the Division of Helium, stated in his evidentiary deposition describing events in the week preceding termination on January 26:

Well, I think we have pretty well covered it: that the budget situation was appealed; and the next thing that I knew about is, we were asked for material that might be used in connection with possible termination of the contracts.

During that last week, Under Secretary Russell again reviewed the program, meeting with several persons from the Mineral Resources and Solicitor's Offices for briefings. Termination was discussed and the Acting Secretary wanted more specific information as to possible bases for termination. In response, by memorandum of Friday, January 22, Assistant Secretary Dole submitted a draft document entitled "Termination of the Four Helium Purchase Contracts," along with an outline of sources relied upon and 19 documents of source material. The draft had been prepared by the Mineral Resources and Solicitor's Offices.

On the next day, or day after (Saturday, January 23 or Sunday, January 24), the text of a publication entitled "Special Analysis, Budget of the United States Government, Fiscal Year 1972," was sent by OMB to the Government Printing Office for final printing. It stated, *inter alia*, that Interior's minerals program budgetary demands would decrease for fiscal 1972 due to:

\* \* \* [A] decision by the Secretary of the Interior to terminate contract purchases of helium because of changes in anticipated future supply and demand.



When the budget was formally released on Friday, January 29, 1971, it and its summary, analysis and appendix all indicated that the helium contracts would be terminated by the Secretary of the Interior.

On Monday morning, January 25, 1971, the Under Secretary dictated a message via car telephone to Assistant Secretary Dole instructing him to contact concerned members of Congress and to justify cancellation of the helium contracts. The message concludes:

The cancellations have to be handled in such a manner that (the decision to cancel) is the decision of the Secretary of the Interior and not the decision of the President or OMB or anyone else. (Of course, I realize that you know this.)

A note relating to helium dated that same day (January 25) from Mr. Russell's secretary to Assistant Secretary Dole, states in a postscript:

We have a large stack of material on this matter, which the Solicitor's office brought down today.

On Tuesday, January 26, 1971, Under Secretary Russell, as the highest ranking official at Interior, informed plaintiff and the three other contractors that their contracts were terminated under the earlier quoted provision 12.1, effective March 28, 1971. His termination letter was the same as the draft document prepared by the Mineral Resources and Solicitor's Offices, and submitted to him on Friday, January 22, or Monday, January 25, 1971.

In summary, the purported Russell termination<sup>38</sup> concludes "that the continued operation of the below listed helium extraction plants under the terms of the contracts, as indicated, and the continued purchase of helium-gas mixture extracted in said plants are unnecessary to ac-

<sup>38</sup> Detailed in finding 159.

complish the purposes of the Helium Act." He defines those legislative purposes as providing a sustained supply of helium which "will be sufficient to provide for essential Government activities." He finds that "[o]ver the past four years, there has been a substantial diminution in the requirements of helium for essential Government activities." He observes that even if the estimates of five named agencies of their needs through the year 2000 should prove accurate, they can be satisfied through the year 1995 "from helium which the Government now has in storage and which it will obtain from the operation of existing Government plants."

The termination notice further cites discoveries of new natural helium resources, namely, the Tip Top field in Wyoming. That discovery is characterized as a "proved reserve of approximately three billion cubic feet," with estimates of an additional 12 b.c.f. Also cited as "new discoveries" are proved reserves of 8 b.c.f. in "shut-in" gas fields, that is, fields which have been abandoned and plugged because not currently economical for fuel gas.

Finally, the notice cites as "the discovery of large new natural helium resources," the improvement in technology developed in the course of these contracts, making economical the extraction of helium from "leaner" natural gases, which could be processed at a cost of \$40-\$70 per m.c.f., costs "within economic limits when viewed, as they must be, against the distant and uncertain future of helium requirements for essential Government activities."

Until the President's budget was formally released a few days later on January 29, 1971, Under Secretary Russell continued his efforts to have funds included for helium conservation.

At trial former Under Secretary Russell testified that had his appeal been granted, and had funds been made available, he "would have been in favor of continuing to buy as much helium as we had funds for." But without ad-

ditional funds, Interior would not have been able to meet its obligations under the contracts. He believes that the helium in the Hugoton field and elsewhere should be conserved, but it was his testimony that the limitations of the Helium Act do not permit continuation of the conservation program. He also believes that if all the helium now in the Hugoton-Panhandle fields were saved it would serve a useful purpose in the future, and that the conservation program was a far-sighted Government project.

Other evidence developed at and before trial shows that other high Interior officials also still feel that the conservation program should be continued. These include Assistant Secretary Dole, Dr. E. F. Osborn, Director of the Bureau, and Harold Lipper, Chief of the Helium Activity. At his confirmation hearings on January 26, 1971, then Secretary of the Interior-Designate Rogers C. B. Morton, also evidenced the personal view that helium as a resource ought to be conserved.

It is concluded that the Russell termination was not predicated, as required by the contract, upon "the opinion of the Secretary of the Interior" that circumstances permitting termination of the contract had occurred. It was, rather, predicated upon a budgetary determination made in OMB.

#### *The Termination Test Based on*

#### *"A Substantial Diminution in Helium Requirements"*

As we know, contract provision 12.1 cites two specific circumstances under which termination was available to the Government, one of these being "a substantial diminution in helium requirements." In the preceding section of this opinion it has been found that Interior was of the opinion, up to the date of termination, that the conservation program should be continued, and it forecast helium requirements for the period contemplated by the program

which demonstrated no diminution in need. Other Government and scientific agencies also predicted increased requirements. In this section additional evidence is reviewed on the issue of whether or not there had occurred "a substantial diminution in helium requirements."

The uses of helium, and present and proposed requirements for helium have been only touched upon earlier. They are hereinafter enumerated with greater specificity as a prelude to discussions of whether or not those future requirements have substantially diminished.

Generally, the major current uses of helium are for pressurizing and purging, controlled atmospheres, research, welding, lifting gas, leak detection, cryogenics, chromatography, heat transfer and synthetic breathing mixtures. The primary pressurizing and purging use is in the space program, to pressurize and purge the engine, propellant and various other systems in the space and launch vehicles, as well as ground support equipment. Helium is used to maintain a controlled atmosphere for growing crystals for transistors, in processing fuels for nuclear energy purposes, and for cooling vacuum furnaces. In shielded arc welding applications, helium permits high welding speeds and deep weld penetration. As a lifting gas, its primary use is in weather monitoring, and astronomical study. A resurgence in the use of helium in lighter-than-air craft is in prospect. Helium provides a rapid and reliable method of checking for the absence of the most minute leaks in a variety of products. Helium is the preferred carrier gas in chromatographic instruments used to determine impurities in a variety of industrial products, especially petroleum, chemical compounds and pharmaceuticals. It has a number of medical applications. As a breathing mixture, helium provides the ability to explore lower depths of the ocean. Each of these uses was acknowledged in the environmental impact statement filed by Interior on November 13, 1972, in connection with liti-



gation initiated by the other three conservation contractors.<sup>39</sup>

Presently under development is the use of helium in high temperature gas cooled nuclear reactors which employ helium because it does not become radioactive; because contaminants are easily removed; because it does not react chemically with reactor fuels or components; and because it permits higher operating temperatures, resulting in higher operating efficiencies. In addition, when helium is employed, thermal pollution tends to be lower than from other nuclear or fossil fuel electric generating plants. The helium acts as a heat transfer medium, transferring heat from the nuclear reactor core to the steam generator which produces steam to run the turbines which, in turn, produce electricity.

Helium-cooled reactors have been constructed in the United States, England, and Germany, and a number of additional ones were on order by the electric power industry as of the end of 1972. A good portion of future nuclear installations are likely to be helium-cooled "breeder" reactors, which are capable of producing energy, plus new fuel supplies.

Somewhat further into the future is the development of nuclear fusion (as distinguished from fission) power, which promises to produce clean electrical energy. Helium-based technology would play a vital role in any such development both as a coolant and in the magnetic confinement of fusionable plasma.

Because helium liquefies at  $-452.1^{\circ}\text{F}$ . (only  $7.6^{\circ}\text{F}$ . above absolute zero) and is the only known element to remain liquid down to temperatures approaching absolute zero where it solidifies only under pressure, it is indispensable in the field of cryogenics, that is, a field of science employing temperatures below  $-430^{\circ}\text{F}$ . One physical phenomenon

<sup>39</sup> See text at notes 10-13 *supra*.

occurring at this temperature range is "superconductivity." Below a transition temperature characteristic of the material, many metals and alloys lose their resistance to the flow of electricity and become superconductors of electricity.

The practical application of this phenomenon is that once an electric current is started in a superconductor it will flow indefinitely without loss of energy, and without the introduction of new energy, as long as the system remains below the transition temperature.

By way of example, on June 4, 1971, the President sent a message to the House of Representatives announcing his program to assure this country of an ample supply of clean energy. It included research and development efforts on magnetohydrodynamic power cycles, underground electric power transmission, advanced nuclear reactor concepts, and controlled thermonuclear fusion, all of which use helium. There has, of course, been even more recent official concern with the energy needs of the Nation.

Superconducting magnets, now in operation throughout the world, produce intense magnetic fields at about one-tenth the cost of producing comparable magnetic field strength with conventional magnets. For example, a superconducting magnet constructed at Argonne National Laboratory cost \$400,000 in refrigeration expense over a 10-year period, whereas electric power costs for a conventional magnet over the same period would have been \$4 million. The uses for such magnets include research in high-energy or plasma physics, in suspension and guidance of high-speed land vehicles (by use of the repulsion characteristic of magnets to achieve levitation), in control and containment of the fusion reaction, in cancer therapy, in loss-free energy storage, and in ore separation.

Japan, France, Poland, West Germany, and the Soviet Union, in addition to the United States, are engaged in research and development dealing with generation of elec-

tric power by the above-mentioned magnetohydrodynamic power cycles (MHD), a more efficient method of converting coal and other fossil fuels directly into electric energy, by burning the fuel and passing the combustion products through a magnetic field at very high temperatures. This method of power generation would increase the amount of energy extracted from fossil fuels, while at the same time cutting costs and pollution. For economic full-scale power generation, an MHD plant would require superconducting magnets which, in turn, require helium.

As part of the President's energy program, on November 1, 1971, Interior contracted with Edison Electric Institute, Inc., and Union Carbide Corporation (Linde Division), for research and development of an underground superconducting AC power transmission cable. Underground superconducting cables contained in pipes filled with liquid helium would permit transmission of large blocks of power underground through congested areas with negligible loss of energy, and it is estimated that one such 20-inch pipe filled with liquid helium could carry more power than New York City was using as of September 1970. In addition to increasing the current-carrying capacity of a cable system by a factor of 20, there is an indicated cost saving of about 50 percent in a superconducting system over a conventional system of the same capacity. The Office of Science and Technology, in the Office of the President, reported to Interior in March of 1970 that "the potential here is very great."

Prototype superconducting electric motors have been built with up to 3,250 hp., and utilizing relatively less energy. Others are under development for various industrial applications, including steel and aluminum production. Use of these motors for ship propulsion systems has been of special interest to the U.S. Navy, where a prototype ship propulsion system is being fabricated. They are also of interest to Britain's Ministry of Defense where prototypes have been built. Superconducting magnets have

been used in Japan and Germany to magnetically levitate and support prototype high-speed trains, and the U.S. Department of Transportation has sponsored studies of such trains by the Ford Motor Company and Stanford Research Institute for high-speed, long-distance travel. This form of levitation is superior to an air cushion which creates turbulence problems, for example, when the train passes through a tunnel.

Some additional Federal agency on-going projects which involve the use of helium include: U.S. Air Force support of research on airborne superconducting generators and superconducting magnets; U.S. Army studies of energy storage and rotating machines; Department of Interior sponsorship of work on electric power transmission and MHD; and Atomic Energy Commission sponsorship of work on power transmission and superconducting magnets for fusion reactors.

Of course, other uses for helium may develop in the future.

Considering, for the time being, just the requirements of the five specific Government agencies upon which Under Secretary Russell relied for his statement that there had been a "substantial diminution in helium requirements," these five agencies alone projected requirements in excess of 2.13 b.c.f. annually by 1990, a need expected to continue to at least the year 2000. When it sought passage of the Helium Act of 1960, Interior had supported its position in favor of the conservation legislation with a lesser forecast than that, namely, an annual national need of 2 b.c.f. by the year 2000.<sup>40</sup> And those projections of NASA, DOD, AEC, the Weather Bureau and the National Bureau of Standards (no other agencies were solicited) did not reflect requirements now or in the future by reason of research and development in electrical energy generation

<sup>40</sup> See finding 166.



and transmsion, transportation, or other potential uses not of direct interest, or regulated by the named agencies. The AEC estimate, for example, did not include helium forecasts for production of energy, the harnessing of nuclear fusion, nor for private utility company requirements, but solely AEC needs. Neither the Federal Power Commission nor any other agency was requested to supply estimates on the potential of helium in underground transmission of electrical energy through superconducting cables.

The Russell termination relies on current fluctuations in helium sales to support a determination of "a substantial diminution in helium requirements." As the record shows, a conservation program addressed to requirements in advance of need necessarily has reference to long-range future requirements for which the helium is being conserved rather than current fluctuations in sales.<sup>41</sup>

Moreover, the decline in Government helium requirements from 707 m.m.c.f. in 1966 to 222 m.m.c.f. in 1970, cited in the termination notice, is addressed solely to the decline in amounts actually sold by the Bureau to Federal agencies and contractors after the self-liquidating features of the program had been undermined. It did not include sales by the Bureau to commercial customers, nor sales by private producers to Government agencies, their contractors, or others. Also, because the self-liquidating features of the conservation program had already been circumvented, Interior was unable to estimate reliably how much helium was actually being purchased and used by the specified Government agencies, and by their contractors and subcontractors for Government purposes; nor how much was being purchased and used for general national purposes.

<sup>41</sup> See finding 169.

In any event, to the extent that fluctuations in current sales might have a bearing on a conservation decision forecasting future requirements, total sales in 1970 were estimated by Interior at 661 m.m.c.f.

In January 1971, at the same time Under Secretary Russell was stating in his termination notice that he could not "reach the conclusion that Government requirements for helium will steadily increase in the future," Interior was publishing its annual official publication on Commodity Data Summaries under the names of Acting Secretary Russell and the Bureau. In it the Bureau reported supply and demand figures for helium which have a more direct bearing on forecasts of future helium requirements. The report noted that although domestic helium usage had declined from its peak in 1966, usage was expected to remain at the lower level through 1971, but then to increase to between 3 and 5 b.c.f. annually<sup>42</sup> by the year 2000, as new programs which were then in the conceptual stage became operational. Moreover, no consideration was given in the Russell termination to helium requirements beyond the year 2000.

The Stanford Research Institute (SRI), a highly respected commercial research and analysis organization, completed three projections of future domestic helium demand under contract with plaintiff, its parent Northern, and other helium conservation contractors. The September 1969 study assumed, *inter alia*, an ample supply of helium to meet requirements, and a continuation of current prices.<sup>43</sup> The February 1971 and March 1973 studies used this same assumption but also analyzed demand assuming a lower supply and consequently higher prices,

<sup>42</sup> A larger figure than predicted by Interior when supporting the 1960 Helium Act.

<sup>43</sup> A shortage of helium and higher prices would, of course, discourage demand.

namely, a doubling in price by the year 2000, again by 2025, and again by 2050.

Each of the SRI reports also assumed that these helium conservation contracts would continue to completion, and that a high level of economic activity would continue.<sup>44</sup> The lowest estimates are contained in the 1973 report, primarily due to some independent factors. One was an assumed substantial drop in the birthrate, inducing a lower gross national product and, in turn, reduced energy consumption, a prime area for helium demand. The other factor was a substantially reduced estimate of NASA activities.

The lowest SRI estimates of annual requirements (in the 1973 report) were 3.2 b.c.f. assuming ample supply; and 2.4 b.c.f. assuming lower supply by the year 2000. These annual estimates soar to 12.8 b.c.f. and 44.7 b.c.f. by the years 2025 and 2050, assuming ample supply, and 6.2 and 16.5 b.c.f., respectively, assuming lower supply.

In the 1971 report, which more closely corresponds to the date of the Russell termination notice, the estimates are much higher.<sup>45</sup>

Because SRI expected declining reserves, after the expiration dates of these helium conservation contracts in the 1980's, it preferred the figures based on assumption of lower supply beginning in the year 2000. Interior, in fact, also used an SRI helium study dated 1969 in preparing its final environmental impact statement to support a later termination notice of February 2, 1973.<sup>46</sup>

<sup>44</sup> While the 1969 estimate includes a small amount for export, none is apparent in either the 1971 or 1973 reports.

<sup>45</sup> Five, 17.9 and 67.5 b.c.f. annually by the years 2000, 2025, and 2050, respectively, with ample supply; and 3.8, 8.9 and 23.2 b.c.f. annually assuming lower supply. A breakdown of anticipated requirements, into cryogenic and aerospace uses, is shown in finding 185.

<sup>46</sup> See text at notes 10-13 *supra*.

The assumption of ample supply at a set and reasonable price was also the basis for Interior's projection of an annual demand of 2 b.c.f. in its 1960 appearances before Congress when it strongly supported the conservation legislation. It is obvious that if the helium conservation program were terminated, and this resulted in a helium shortage, the cost of helium would be prohibitive, and large scale applications would become economically unattractive, dampening demand. Therefore, the only projections of future requirements which are relevant for the future period intended to be served by the conservation program are those predicated upon a completion of the conservation program and the contracts, and an ample supply of helium for that period.

In 1970, just prior to the purported termination, Interior forecast an annual helium demand for the year 2000, in the range of 1.4 to 3.6 b.c.f. The high estimate, moreover, was not dependent upon new scientific or technological breakthroughs, but simply normal growth of then known applications.

It was, moreover, an estimate limited to the requirements of the same five Government agencies to which Under Secretary Russell alluded in his termination notice. The 1970 estimate was one of continuously increasing need, even though it did not even take into account all governmental activities such as transportation, Navy ship propulsion and other Government sponsored or regulated matters. No more current evaluation of requirements was made before the termination notice was dispatched on January 26, 1971.

Interior's Bonneville Power Administration, responding to the Draft Environmental Impact Statement prepared by Interior in 1972,<sup>47</sup> estimated that by the year 2000 ap-

<sup>47</sup> In connection with the injunction litigation heretofore described.



proximately 5 b.c.f. of helium would be required annually for electric power use alone. The Lawrence Radiation Laboratory has projected that within the next 50 years there will be 87 nuclear fusion plants in this country requiring an inventory of from 20 to 30 b.c.f. of helium.

Other than in the termination notice there have been no official forecasts by Interior or by any other agency suggesting that helium usage will not *increase* above current levels. The sole differences of opinion have revolved about the degree of increase; not about whether an increase will occur.

Within the context of this helium conservation program to satisfy long-range future needs, there had been no "substantial diminution in helium requirements" when the termination notice was dispatched.

*The Termination Test Based on "The Discovery of Large New Natural Helium Resources"*

Generally speaking, substantially all of the known helium reserves of the United States contained in natural gas are being depleted as the gas is marketed for fuel. The overwhelming bulk of it will be gone by about 1990. After that approximate date, helium extracted from natural gas will have to come from previously conserved helium (such as that produced under these contracts), from small quantities extractable from remaining "shut-in" fields,<sup>48</sup> or from helium discoveries, if any, made in the meantime. Natural gas, primarily fuel gas, is the only known source of helium other than the atmosphere. Helium has never been recovered from the atmosphere on a large scale. Recovery from the atmosphere requires enormous expenditures of energy at very high cost and with resultant pollution. Helium may also be produced as a by-product of the nuclear fusion of

<sup>48</sup> Fields not now being produced for various reasons, *e.g.*, the natural gas is not currently valuable for fuel.

hydrogen, if and when nuclear fusion is ever developed for power production, but helium so produced would provide only a nominal percentage of our anticipated future requirements.

Natural gas containing helium is classified as either helium-rich (helium content of 0.3 percent or greater) or helium-lean (less than 0.3 percent). Estimates of natural gas reserves containing helium are categorized as "proved," "probable," "possible," or "speculative." As used by Interior, "proved" reserves are those which have demonstrated the ability to produce by either actual production, or a conclusive formation test. These reserves define the current estimated quantity of natural gas and natural gas liquids which analysis of geologic and engineering data demonstrates with reasonable certainty are recoverable in the future from known oil and gas reservoirs under existing economic and operating conditions. "Probable" reserves are reserves which are believed to exist, on the basis of some drilling, but which need further drilling and evaluation to be classified as proved. "Possible" reserves are those which may result from new field discoveries in areas of established production. "Speculative" reserves are those which will result from new discoveries where sedimentary formations are present, but there is no prior production history.

As of January 1, 1971, Interior estimated helium-bearing gas reserves and helium stored under the conservation program, in the following categories and amounts:

- (a) The proved reserves were comprised of 27.7 b.c.f. stored under the conservation program, in part under this contract, in the Cliffside field, plus 136.6 b.c.f. in helium-rich natural gas, only 10.3 b.c.f. of which were in currently shut-in fields. Eighty-three percent of this 136.6 b.c.f. was contained in three fields—the Hugoton field of Kansas, Oklahoma and Texas, the West Panhandle field of Texas, the source

of gas being processed by plaintiff (and others) for fuel gases and helium as earlier detailed, and in the Keyes field of Oklahoma. The balance is contained in 98 small isolated gas fields throughout 10 states. All but the shut-in fields are a wasting or depleting source, since they are now being used for fuel and related purposes.

(b) The probable reserves were 16.8 b.c.f. in helium-rich natural gas, and 67.6 b.c.f. in lean gas. The rich gases all represented shut-in reserves, 75 percent of it in the Tip Top field of Wyoming. The lean gas reserves, however, were estimated from depleting sources, *i.e.*, sources currently being used for fuel.

(c) The possible and speculative reserves, estimated at 218.9 and 309.5 b.c.f., respectively, ranged in helium content from 0.006 percent to 0.278 percent, averaging about 0.076 percent, and were located throughout the United States. As these were in yet to be discovered fields, none would be depleting as of the time of the Interior estimates in January 1971.

(d) <i>Category of Reserve</i>		<i>Estimated helium volume</i>	
		(b.c.f.)	
Proved:			
Depleting helium-rich fields:	126.3		
Shut-in helium-rich fields:	10.3		
Conservation storage	27.7		
	<hr/>	164.3	164.3
Probable:			
Shut-in helium-rich fields:	16.8		
Depleting helium-lean fields:	67.6		
	<hr/>	84.4	84.4
Possible:			
Nondepleting, lean helium content fields:			218.9
Speculative:			
Nondepleting, lean helium content fields:			309.5

The reason helium has never been recovered economically, other than from natural fuel gas, is its low concentration in the atmosphere, namely, five parts per million (0.0005 percent of the atmosphere). Extraction by this method requires that a relatively large volume of air be processed to recover a relatively small volume of helium. Thus, in order to extract 1 b.c.f. of helium from the atmosphere, approximately 26,000 megawatts of energy would be required. This amounts to about one-tenth of the entire United States power capacity in 1972. Using present fossil fuel generating plants, this would produce 670,000 lbs/hr of air pollutants, and would increase thermal pollution by 4 trillion B.t.u.'s per day just to produce 1 b.c.f. of helium.

The cost to extract just helium from the atmosphere would run between \$1,000 and \$3,000 per m.c.f., compared with the initial price of \$11.24 under this contract. Although present oxygen extraction plants could be converted to also extract helium, this method would also cost about \$500 per m.c.f. of helium extracted, and only 475 m.m.c.f. would be anticipated to be produced annually by the year 2000, even if oxygen demand were to increase dramatically between now and then. For these reasons, neither Interior nor any other authority considers atmospheric extraction of helium as a helium resource.

It is anticipated that our rich, proven, depleting reserves of helium in natural gas will be essentially gone by about 1990; and that our lean, probable, depleting reserves will be essentially gone by about 1995. Most of the natural gas which is today being processed for fuel and related purposes, is expected to be gone by the end of the century. Beyond 1995, aside from shut-in and conservation storage under this program, substantial amounts of helium from lean natural gas sources are considered to be only "possible" or "speculative."



Between 1995 and the year 2000, helium from future discoveries, overwhelmingly in only the "possible" and "speculative" categories, is forecast to be available at about 15 b.c.f. of helium annually. From 2000 to the year 2030 helium from future discoveries, overwhelmingly in only the "speculative" category, is forecast to drop to an annual availability of about 4 b.c.f., with complete depletion soon thereafter. Helium from these future "possible" or "speculative" lean streams (assuming they are proved and not consumed as fuel) could be produced by the Government at a cost (depending on the helium content) of from \$40—\$70 per m.c.f. to \$175—\$200 per m.c.f. The greater volume, it is estimated, would be in the latter range. It is technologically possible to recover helium from natural gas with a helium content as low as 0.05 percent.

Interior anticipates that the Keyes and West Panhandle fields will be depleted by 1985, the approximate date these conservation contracts were to be completed, thereby substantially reducing the annual availability of helium from fuel gas in 1986 and thereafter. For this reason, helium available from presently proved depleting fuel sources, *assuming that all the contained helium were extracted and conserved therefrom*, would not after 1985 be able to meet even the annual low demand projected by SRI in 1971, nor the median or high annual demands predicted by Interior in 1970. Subsequent to 1990, even the lowest projection by Interior could not be met with helium extracted from these sources. These estimates are, moreover, based only on presently known uses of helium, and not on uses which may be developed in the future.

Since 1961, an average of 8.4 b.c.f. of helium has annually flowed from proven helium-bearing gas reservoirs, along with the natural gas being withdrawn for fuel purposes. However, only about 4.5 b.c.f. of this helium was annually extracted for use or storage, the balance being wasted into the atmosphere as it accompanied the natural

gas to the fuel consumer. This usage and wastage has not been offset by the discovery of large new natural helium resources.

The prospect of discovering a helium-bearing gas reserve in the future, as large as that contained in the Hugoton-Panhandle fields, is poor. These fields, which supply the gas for the conservation contracts, are the largest helium reserves known to exist in the world. Natural gas reserves are a finite quantity and will be exhausted. It is reported that there is a current energy crisis in the United States which is in part the result of dwindling natural gas supplies.

Interior has conducted a helium survey program since 1917, analyzing about 13,000 samples of gases from wells, fields and pipelines throughout the United States. From 1961 through 1970, with the exception of 1965, no significant helium resources were found. Interior annually reported to Congress during these years, as required by the 1960 Helium Act. Its reports show that the helium reserves of the United States have progressively declined. The annual reports for 1971 and 1972 have also failed to indicate any new discoveries of significant amounts of helium.

In 1961, the year this conservation contract was signed, the earlier-mentioned Tip Top field was discovered in a mountainous part of Wyoming, but it was plugged and abandoned because of the low heating value of its natural gas. By 1965 Interior had completed its analysis of the helium content of the field. Interior estimates "it contains about 3 of the 10.3 b.c.f. of proved helium-rich reserves it figures to be in shut-in fields; and about 12.4 of the 16.8 b.c.f. of "probable" helium-rich shut-in reserves which it has evaluated. These estimates are speculative.<sup>49</sup> Only one

<sup>49</sup> For example, the recoverable reserve of helium-bearing gas in the Rattlesnake field on the Navajo Indian Reservation was vari-

exploratory well has been drilled in the helium-bearing region of the Tip Top field, and that was by the Mobil Oil Company in 1961 at a cost of about \$800,000. Four to six such exploratory wells would be necessary to prove the field, as Interior advised Congress in 1969. For this reason, Interior cannot presently determine whether or not the approximately 3 b.c.f. of helium which it categorizes as "proven" at Tip Top, can actually be produced. Former Under Secretary of the Interior Russell did not consider the field as proved, nor as a large reserve. The estimated "proved" helium reserve at Tip Top is less than 3 percent of the total United States reserves, and less than the amount which was being conserved every year under this conservation program.

Interior estimated in 1967 that the cost of producing helium from the Tip Top field by the Government would then be \$10.83 and \$18.79 per m.c.f. The mountainous terrain at Tip Top, and its remoteness from storage, transportation, purification and liquefaction facilities, make it difficult to estimate what it would actually cost to market or store helium from Tip Top.

This Tip Top field was the only specific reference to "the discovery of large new natural helium resources" made by Under Secretary Russell in his termination notice. The balance of the estimated shut-in helium-rich reserves (approximately 7.3 b.c.f. estimated and classified by Interior as proved, and 4.4 b.c.f. estimated and classified as probable) are contained in about 40 fields located in various parts of Montana, Wyoming, Utah, Colorado, Kansas, Arizona, New Mexico, Oklahoma, Texas and West Virginia. Very few of these are located near existing extraction, purification or storage facilities, and no estimate has been

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ously estimated at 12.4, 47.3, and 17 b.c.f., but it actually produced only 1.2 b.c.f. See *Navajo Tribe of Indians v. United States*, 176 Ct. Cl. 502, 523-25, 364 F.2d 320, 332-33 (1966).

made of the cost of extracting helium therefrom, nor is it known whether they will in the meantime be used as fuel gas, thus dissipating any helium contained therein. No estimate has been made of the cost of transporting gas from scattered points to a common gathering point where efficient extraction facilities can be constructed, such as exist now at Bushton.

In estimating the reserves in shut-in fields, Interior has only estimated the amount of helium in the gas field, not the cost of extraction nor the amount of helium which could in fact be extracted. Although a shut-in well may have been plugged with concrete and abandoned, it is still possible for the gas in the well to have escaped since the time it was plugged. Some of these shut-in gas wells which the termination notice now cites as "the discovery of large new natural helium resources" are not newly discovered, and were tapped and sampled by Interior prior to 1960 when the 1960 Helium Act and the conservation program were being proposed in Congress.

For example, it was estimated in 1960 that the Pinta Dome area of New Mexico, cited during the hearings, contained 1.5 b.c.f. of helium, an amount then not considered significant in relation to the total proposed conservation program. It is currently estimated that only 23 m.m.c.f. are available at Pinta Dome.

As of January 1, 1971, Interior had approximately 38.8 b.c.f. of helium in storage or under its control. 27.7 b.c.f. had already been stored, 3 b.c.f. was estimated as native to the Cliffside storage field, 7.3 b.c.f. was expected from Government-owned helium plants, and 0.8 b.c.f. was expected to be delivered by the conservation contractors, including plaintiff, between January 1, 1971, and the end of March 1971, when termination was supposed to have taken effect. By February 1973, approximately 44.5 b.c.f. of helium was in Interior's control or in storage. All of this, and more, was in contemplation when the helium



conservation program was launched. None of the helium stored by Interior has been used.

The estimate of future helium availability made by Under Secretary Russell to support his termination notice, was based upon a September 1969 Interior report. No new evaluations of future helium availability existed between December 31, 1970, and January 26, 1971, when the termination was dispatched. There were no significant discoveries of helium reserves in the 6 months prior to January 1971. No pertinent data was provided to Mr. Russell in January 1971 that was not available to him on December 31, 1970, when he was still strongly supporting the helium conservation program.

There had not been "the discovery of large new natural helium resources" within the intendment of contract provision 12.1 when the Russell termination was dispatched.

*The Termination Test Based on  
"Any Other Circumstance of Similar Nature"*

Prior to the 1960 Helium Act, helium had not been recovered from gas streams containing less than 0.9 percent helium. Helium has been extracted by these helium conservation contractors from gas containing 0.4 percent helium. Helix agreed to and did extend the technology and the state of the art so as to permit the economical recovery of 90 percent of the helium from streams containing 0.46 percent helium. Other advances in technology which were achieved by plaintiff (as heretofore related) in the performance of its contract and at its sole risk, were the development of very large-scale processing facilities and the development of more efficient heat exchangers, making it economically possible to extract helium from these lower-helium content sources.

Under Secretary Russell relied in part on these improvements in technology making possible the recovery of helium

from leaner sources as a circumstance similar to "the discovery of large new natural helium resources," warranting termination of the contract. He also relied in part upon a July 1969 report by the Bureau of Mines which indicated that high operating efficiencies and economies could be achieved in processing gases with helium content under 0.3 percent, based upon the processes and plants actually developed by the helium conservation contractors, all as contemplated by the Bureau's engineers in the course of the negotiation of this contract. In fact, were a new helium plant to be built by the Government today, it would employ essentially the same technology as that developed in the construction and operation of plaintiff's helium plant.

When plaintiff's contract was being negotiated, the Government representatives wanted plaintiff to prove that their advanced technology could in actuality extract helium economically from lower helium content natural gas streams. It was never intended that should plaintiff achieve one of the important objectives contemplated by the contract, this would constitute grounds for termination. That would eliminate any incentive for accomplishing this contract objective. From the inception of the contract until the termination notice, Interior did not consider the development of this technology by plaintiff as grounds for termination of plaintiff's contract. Its development did not constitute the occurrence of "any other circumstance of similar nature," that is, similar to "(1) the discovery of large new natural helium resources, or (2) a substantial diminution in helium requirements" supporting termination, within the intendment of contract provision 12.1.

*Compliance With the National Environmental Policy Act  
as a Condition Precedent to Termination*

In a general overview of the issues in the case at the outset of this opinion,<sup>50</sup> certain injunction litigation pressed

<sup>50</sup> See text at notes 10-13.

by the other three conservation contractors was briefly described. In further elaboration, Under Secretary Russell had neither considered the environmental consequences of his termination action, nor filed an environmental impact statement dealing with the termination when he issued the termination letters of January 26, 1971; and on March 27, 1971, one day prior to the date the termination was stated by Mr. Russell to become effective, an injunction was issued. The injunction was sustained on appeal, the court stating:

\* \* \* It is undeniable that the Act compels the Department to comply with its provisions when action is being taken having to do with a depletable resource. Here also there is evidence of "new and expanding technological advances" directly related to the need for an application of this resource.

It is undisputed that the Secretary has not considered the environmental impact and has not taken any steps to fulfill the requirements of the NEPA. Indeed the Secretary has not even followed the regulations of his own Interior Department purporting to implement the statute. \* \* \*

Having concluded that the court had jurisdiction in this cause and that the NEPA fully applies to the action here involved, it follows that the District Court acted properly in enjoining the termination program, at least pending the compliance by the Secretary with the NEPA. [51]

Interior thereafter filed an environmental impact statement on November 13, 1972. It purported to cover the environmental impact of terminating the other three conservation contracts, but not the one which is the subject of

<sup>51</sup> 455 F.2d 650, 656 (10th Cir. 1971).

this suit for breach of contract. No environmental statement addressed to this contract has ever been issued.<sup>52</sup> During the time that injunction was in effect, from March 27, 1971, until October 19, 1973, Interior received, paid for, and stored helium produced by the other three contractors.<sup>53</sup>

A later termination notice was addressed to these other three conservation contracts, but it did not state that it was intended to terminate plaintiff's contract, nor did it purport to do so. There is, therefore, no evidence in the record that the only termination notice purporting to terminate this contract, namely, the Russell termination of January 26, 1971, was in compliance with the National Environmental Policy Act.

#### *The Second Termination Notice*

To the extent that the later termination notice above-mentioned may be deemed by implication to have effectuated termination of this contract, it is useful to discuss whether or not the circumstances set forth in contract provision 12.1 as warranting termination, had in the meantime changed.

When Interior filed its environmental impact statement in November 1972, the five specific Federal agencies whose requirements had been relied upon to support the purported Russell termination, were provided an additional opportunity to revise their estimates of future require-

<sup>52</sup> As previously noted, the environmental impact statement issued with respect to the other three contracts was held to be inadequate on June 11, 1973, and that conclusion was reversed on appeal, October 19, 1973, with a direction to dissolve the injunction. See note 13 *supra*.

<sup>53</sup> These other three contractors, of course, paid no storage charges for helium delivered, as did plaintiff under the circumstances hereinafter related.



ments. The largest change occurred in NASA requirements. On July 12, 1972, NASA advised Interior that on the basis of a detailed evaluation, it anticipated its annual usage would climb from the then 76 m.m.c.f. to about 95 m.m.c.f. by 1990. NASA stated that it had no basis for determining its needs for the 1990's but speculated they would not exceed 150 m.m.c.f. annually during that period. Two months earlier NASA had reported to Interior that it expected lower consumption than it had anticipated in 1969, but that it had "no basis for a meaningful, quantitative estimate of [its] long-range helium requirements." The adjusted usage estimate in November 1972, included in Interior's impact statement, was:

Time Period	ANNUAL requirements (m.m.c.f.)					
	NASA	DOD	AEC	WB	NBS	Total
1972	76	60	43	9.5	0.6	189.1
1973-1975	84	60	43	9.5	0.6	197.1
1976-1980	63	60	44	9.0	0.6	176.6
1981-1985	79	76	44	8.0	0.6	207.6
1986-1990	95	76	45	7.0	0.6	223.6
1991-1995	150	71	45	5.0	0.6	271.6
1996-2000	150	71	46	4.0	0.6	271.6
Total	3,013	2,130	1,305	222.0	40.0	6,710.0 <sup>54</sup>

Also, as earlier mentioned with respect to the Russell termination, in response to Interior's Draft Environmental Impact Statement, Interior's Bonneville Power Administration (which was not one of the five Federal "using" agencies considered), advised the Director of the Bureau by letter of July 6, 1972, that it projected 5 b.c.f. of helium would be required annually for electrical power use alone by the year 2000.

<sup>54</sup> All totals may not add up as some agencies gave average annual use, and a total use figure for the 1972-2000 period.

By letter of February 2, 1973, Secretary of Interior Morton again notified Cities Service Helix, Inc., National Helium Corporation and the Phillips Petroleum Company, the three conservation contractors which had procured an injunction, that their helium contracts were terminated, effective at 8 a.m., c.s.t., 60 days later (hereinafter the "Morton termination"). Attached to the termination letter was a statement containing an evaluation of the environmental consequences of the termination of the three contracts, and the contractual reasons on which termination was predicated. Secretary Morton stated that these other three contracts were being terminated pursuant to their respective contract paragraphs 12.1, provisions which were identical in material respects to paragraph 12.1 of plaintiff's contract. As in the case of the Russell termination, the grounds stated were essentially assertions of a substantial diminution in helium requirements, the discovery of large new natural helium resources, and the ability to economically recover helium from lean gas. He asserted, as had the purported Russell termination, that the purposes of the 1960 Helium Act were to provide solely for "essential Government activities," defined as the needs of the five Government agencies often alluded to above. These purposes, he concluded, would not be frustrated by termination of these three contracts.

With respect to the grounds based on a substantial diminution in helium requirements, Secretary Morton relied on actual, *current* usage figures by the five specific Government agencies, and asserted that they had increased from 355 m.m.c.f. in fiscal year 1960 to 684 m.m.c.f. in fiscal year 1966, then decreased to 280 m.m.c.f. in fiscal year 1972. Unlike the Russell termination notice, these figures included not only sales by the Bureau to Government agencies, but also a rough estimate of the amount of helium which might have been procured from private producers. The Secretary also asserted that the revised projections of future use by the five helium using agencies showed a

drop from an estimated need of 46.5 b.c.f. from 1972 to the year 2000, to an estimated need of 6.7 b.c.f. for that period. This usage could, he stated, be met with the estimated 44.5 b.c.f. of helium Interior then had either stored or within its control. He dismissed all estimates of need beyond the year 2000 as conjectural, and beyond the purposes of the helium legislation.

Although the Secretary denied that the purposes of the helium legislation were to provide for other than those five agencies, he also analyzed the total domestic helium demand, excluding exports, and asserted a diminution in that demand as well. His figures showed an increase from 415 m.m.c.f. in fiscal year 1960 to 897 m.m.c.f. in fiscal year 1967, then a decrease to 440 m.m.c.f. in fiscal year 1972. However, at trial it was shown that charting these estimates on a calendar year basis would have indicated an increase from 441 m.m.c.f. in calendar year 1971, to 475 m.m.c.f. in calendar year 1972. In any event, comparing his figures with Interior's 1959 projections as presented to Congress, he showed demand falling substantially short of projections from fiscal year 1963 through fiscal year 1972.

Secretary Morton also pointed to the 1969 Interior projections of future need, and the SRI 1969 and 1971 forecasts, contending that Interior's 1969 low estimate of 33 b.c.f. from 1972 through the year 2000 was more reliable than either the high 69 b.c.f. or median 51 b.c.f. estimates by Interior or the 87 b.c.f., 76 b.c.f., or 68 b.c.f. estimates of SRI, or even Interior's 1959 projection of 55 b.c.f. for this period. He argued that only Interior's 1969 low estimate (33 b.c.f.) took into account diminished use of helium in the space program.

With respect to the termination grounds based on the discovery of large new natural helium resources, the only addition Secretary Morton made to those alleged in the prior Russell termination notice, was the discovery of

another 2.3 b.c.f. of proved shut-in rich reserves, but he actually revised the total probable shut-in rich reserves down to 17 b.c.f., as of January 1971. As had the Russell termination statement, Secretary Morton cited 218.9 b.c.f. of possible helium reserves, and 309.5 b.c.f. of speculative reserves which he asserted were now capable of economical extraction due to the improved technology developed by plaintiff and the other conservation contractors, as previously described.<sup>55</sup>

When the Morton termination was issued, Interior could, at best, only roughly estimate what amount of helium was being used by the five Government agencies, their contractors and subcontractors, and what amount was being used otherwise. Interior was not able to identify with any degree of specificity, the amount of helium sold by private producers (including the other conservation contractors) to Government contractors and subcontractors. Its estimate of Government usage was based upon an analysis of its own records and talks with some Government contractors and agencies. Similarly, in estimating total domestic demand, Interior arrived at its figures by asking private producers what amounts they produced, and by assuming a very limited storage capacity.

Secretary Morton's determination of a substantial diminution in future need was based largely upon sales figures he regarded as indicating a drop in demand for helium during the immediately preceding few years. However, it was Interior's position, in response to criticism of the program from OMB in March of 1970, and from the GAO in September 1969, that short-term changes in demand cannot reliably be used to predict the long-term future need contemplated by the conservation legislation. As in the case of the Russell termination statement, the Morton ter-

<sup>55</sup> Both the Russell and Morton termination notices were issued after this litigation had been initiated on December 24, 1970. Both were prepared within the Office of the Solicitor.



mination statement does not give consideration to national helium requirements past the year 2000.

Even on the assumption that the "substantial diminution in helium requirements" test is addressed solely to the needs of the five specified Government agencies, a determination cannot be made that these essential Government activities alone will have an assured supply of helium in the future. When the test is addressed to national needs, including the present and future needs for ample supplies of clean energy, industrial activities, transportation, scientific and technological activities, it is obvious that essential Government activities are further adversely affected because Government activities are interrelated with industrial activities.

Assuming for the sake of discussion that the Morton termination related in any respect to plaintiff's contract, the circumstances described in contract provision 12.1, and heretofore discussed in detail in connection with the Russell termination,<sup>56</sup> had not appreciably changed. The same conclusions are reached with respect to those circumstances as grounds for termination, as were heretofore expressed in the discussion of the Russell termination.

As a matter of possible interest, on June 6, 1974, the following bill<sup>57</sup> was introduced in the House of Representatives, and referred to the Committee on Interior and Insular Affairs:

#### A BILL

To authorize and direct the Secretary of the Interior to conserve and store helium.

<sup>56</sup> Which did purport to terminate this contract.

<sup>57</sup> H.R. 15252, 93rd Cong. 2d Sess.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Helium Storage Act of 1974".*

SEC. 2. The Congress declares that helium is a wasting national asset and its depletion to the atmosphere is not in keeping with the national interest of conserving our natural resources, and in order to promote the general welfare and provide for the national security, it is the policy of the Federal Government to provide for the conservation and storage of helium to meet existing and potential future requirements.

SEC. 3. For the purpose of conserving and storing helium extracted from natural gas, the Secretary of the Interior shall, so long as non-Federal helium extraction facilities are in operation, at the election of such non-Federal facilities and without storage expense, accept, collect, receive, and store crude helium in the existing Federal helium pipeline and storage system, and conserve, hold, and store the same in the existing Federal underground storage facility.

SEC. 4. The provisions of section 3 of this Act shall impose no additional requirement on the Federal Government to expand the existing Federal helium pipeline and

SEC. 5. The Secretary of the Interior shall at no expense to the non-Federal helium extraction facility redeliver, upon demand, not more than 92 per centum of the helium received at a rate not greater than the volume rate at collection so long as the Federal Government operates and maintains the existing Federal pipeline and storage system.

SEC. 6. There are authorized to be appropriated such sums as necessary to carry out the purpose of this Act.

*The Government's Affirmative Defense*

A number of the broadly-stated issues listed at the outset of this opinion relate to the Government's affirmative defense<sup>58</sup> wherein it alleges that by "letter dated January 26, 1971, the Under Secretary of the Interior notified plaintiff that pursuant to said paragraph [12.1] its contract was to be terminated effective sixty days after the mailing of the letter or on March 28, 1971. Consequently plaintiff is not entitled to any payment from defendant for helium produced by it following the termination of the contract."<sup>59</sup> That defense hinges, of course, upon a showing that the contract was validly and effectively terminated by defendant.

It is equally clear that the burden of proof is on defendant to establish an affirmative defense which it pleads,<sup>60</sup> by a fair preponderance of the evidence and the weight of authority. In its brief,<sup>61</sup> defendant's counsel argues that plaintiff "is in fundamental error in assuming \* \* \* that the burden is on the Government to show by clear and convincing evidence that the grounds for termination, expressed in Article XII, exist." But it is defendant's position which is in error.<sup>62</sup>

<sup>58</sup> See note 8 *supra* and related text.

<sup>59</sup> Defendant's answer.

<sup>60</sup> See Rule 37(b). Defendant has pleaded the purported termination as "an avoidance or affirmative defense," under the cited rule.

<sup>61</sup> Page 65, under the heading "Plaintiff Has Failed to Establish That The Grounds For Termination Do Not Exist."

<sup>62</sup> See *Scherr & McDermott, Inc. v. United States*, 175 Ct. Cl. 440, 448, 360 F.2d 966, 970 (1966); *Williams v. NASA*, 463 F.2d 1391 (C.C.P.A. 1972), *cert. denied*, 412 U.S. 950 (1973); *Niccum v. Farmer's Coop. Elevator Co.*, 457 F.2d 453, 455 (3th Cir. 1972); *Dabbs v. International Minerals & Chem. Corp.*, 339 F. Supp. 654, 661 (N.D. Miss. 1972), *aff'd* 474 F.2d 1344 (5th Cir. 1973); *Pan*

To carry its burden, defendant must establish<sup>63</sup> that a termination notice issued under a contract provision contained in a contract earlier breached and no longer in effect, was nevertheless valid and effective; *and* that a termination notice to which the NEPA applied, but which was not in compliance with the NEPA, was nevertheless valid and effective; *and* that the decision to terminate was in fact (in the words of the contract) "the opinion of the Secretary of the Interior"; *and* that his decision rested upon a correct reading of "the purposes of the Act"; *and* that there had occurred prior to his decision to terminate, "the discovery of large new natural helium resources"; *or* "a substantial diminution in helium requirements"; *or* "any other circumstance of similar nature." In varying degree, defendant falls short of establishing any of these elements.

Treating with them in turn, the defendant's purported termination action rests in this case not upon a statute, nor a regulation, but rather upon a negotiated contract provision. It was a specially negotiated provision which bears no substantive resemblance to uniform "Termination For Convenience of the Government" clauses,<sup>64</sup> employed when it is necessary for the Government to reserve the right to terminate for any reason whatever, falling within

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*Am. Tankers Corp. v. Vietnam*, 291 F. Supp. 49, 52 (S.D. N.Y. 1968); *Idem.* 296 F. Supp. 361, 364 (1969); *Goldberg v. International Testing Corp.*, 30 F.R.D. 367, 368 (1962). In any event, the placing of "burden of proof" on one party or the other is of merely peripheral interest here, since an overwhelming quantity of evidence has been addressed to the substantive issues by both parties, and those issues can readily be resolved by a clear preponderance of the evidence.

<sup>63</sup> See text at note 8 *et seq.*, and summary of issues *supra*.

<sup>64</sup> See, for example, those prescribed for the Department of Defense, 32 C.F.R. § 8.700 *et seq.*, and for other departments such as Interior, 41 C.F.R. § 8.700 *et seq.*



the broad definition of its "convenience." In fact, the pertinent regulations<sup>65</sup> describing the use of these uniform "convenience" clauses explicitly provide: " \* \* \* However, to the extent that clauses *actually used* in contracts are inconsistent with the provisions of this part, the provisions of the clauses *actually used* shall control \* \* \* ." (Emphasis supplied.)

The standard "convenience" termination provisions, moreover, have their origin in statute.<sup>66</sup> They are currently employed whenever termination "is in the best interest of the Government," or when a contractor has been erroneously terminated for default.<sup>67</sup> Nowhere do these standard provisions suggest that a contract in which they are contained is thereby rendered immune from breach by either party, or that they may be exercised, after a total and material breach has rendered the contract inoperative.

<sup>65</sup> 41 C.F.R. § 1-8.000(b).

<sup>66</sup> The Contract Settlement Act of 1944, 58 Stat. 649, 41 U.S.C. § 101 *et seq.*, having as its objectives, *inter alia*, " \* \* \* to expedite reconversion from war production to civilian production as war conditions permit \* \* \* to assure to prime contractors and subcontractors, small and large, speedy and equitable final settlement of claims under terminated war contracts, and adequate interim financing until such final settlement \* \* \* to assure uniformity among Government agencies in basic policies and administration with respect to such termination settlements and interim financing \* \* \* ."

<sup>67</sup> 41 C.F.R. § 1-8.601

"(b) If the contract provides for its termination for convenience of the Government and if, after issuance of a notice of termination for default under one of the clauses set forth in § 1-8.702, § 1-8.707, § 1-8.709-1 or § 1-8.710, it is determined for any reason that, under the provisions of the clause, the contractor was not in default or that the default was excusable, each of the clauses provides that the notice of termination shall *be deemed* to have been issued under the termination for convenience provisions of the contract, and that the rights and obligations of the parties shall be governed accordingly." [Emphasis supplied.]

A contractor is certainly not entitled to the benefits of a "convenience of the Government" termination after he has defaulted, unless it is later determined that he was in fact not in default. In the latter instance, the Government is *contractually* relieved of what might otherwise be its breach (for the wrongful termination) by a provision stating that the erroneous default termination shall be *deemed* a termination for the Government's convenience.

It is therefore *a fortiori* true that, absent that contractual scheme,<sup>68</sup> the traditional and controlling legal principle applies. That principle<sup>69</sup> is that:

A party who has reserved a power of termination loses that power if he himself commits such a breach as goes to the essence and discharges the other party. A subsequent notice of termination has no effect upon the other party's right to full damages for the existing total breach. \* \* \* [70]

<sup>68</sup> Namely, an open-ended right in the Government to terminate for convenience, coupled with a right to convert to a "convenience" termination if a prior default termination action is later found to have been erroneously exercised. *Cf.* and contrast provisions 12.1 and 12.2 of this contract. And see *Michael Carchia, Jr. v. United States*, 202 Ct. Cl. 723, 485 F.2d 662 (1973).

<sup>69</sup> 6 CORBIN, CONTRACTS § 1266 at 68.

<sup>70</sup> In this case, the Government's breach has been found to be *total and material*, justifying the plaintiff in considering the contract at an end, and it has been further found that plaintiff has *not waived* that breach. 197 Ct. Cl. 118, 134, 455 F.2d 546, 555-56. See & cf. *Coastal Oil Co. v. Eastern Tankers Seaway Corp.*, 103 A.2d 26, 29 N.J. Super. 565 (1954). See also, *Merando v. Mathy*, 152 F.2d 21 (1945), *cert. denied*, 327 U.S. 804 (1946). The court stated therein:

"The fact that the defendant had the right, under the terms of the subcontract, to terminate it on three days' written notice is no protection in the premises since its breach by nonfeasance preceded his efforts to set aside the agreement according to its terms, and

Defendant's reliance on *Nolan Bros. v. United States*.<sup>71</sup> is misplaced. That was a conventional termination for convenience under the standard, open-ended provision earlier discussed. The court stated:

*The crucial factor is the termination for the Government's convenience. That was an action the defendant had a full right to take under the contract which lodged in the contracting officer the fullest of discretion to end the work "in the best interests of the Government." \* \* \* If, as plaintiff now seems to maintain, the spur to invocation of this right of termination was the defendant's realization that its plans and specifications were faulty, reliance on that motive would not be improper or an abuse of discretion. The mere existence of a default by the Government would not bar convenience-termination (College Point Boat Corp. v. United States, 267 U.S. 12, 16 (1925)) and*

rendered it impossible for plaintiffs to perform. The defendant seeks to set up the rule in *United States v. Gleason*, as giving the unqualified right to terminate the contract at his discretion, and apparently without regard to his own conduct. It is perhaps sufficient to point out that the right to terminate, embodied in the contract, was extinguished by prior termination through breach." [152 F.2d at 22.] [Emphasis supplied]

In *Whitbeck v. United States*, 77 Ct.Cl. 309, 336, cert. denied, 290 U.S. 671 (1933), this court observed:

" \* \* \* The defendant's breach of the contract was substantial, and thereafter it really had nothing left to cancel. \* \* \* "

And in *Klein v. United States*, 152 Ct.Cl. 8, 18, 285 F.2d 778, 783 (1961), this court stated:

" \* \* \* It would be anomalous indeed if the Government were entitled to breach its contract at will, and then escape the penalty for its breach by retroactively invoking a termination for convenience."

<sup>71</sup> 186 Ct. Cl. 602, 405 F.2d 1250 (1969).

*plaintiff had not treated the alleged breach as ending the entire agreement. \* \* \* [Emphasis supplied.]*<sup>72</sup>

*Nolan and Reiner* (notes 71 and 72) are representative of cases in which the contract embodied a standard provision investing the Government with the all-inclusive privilege of terminating "at will." *Reiner* is characteristic of cases in which the contracting officer, prior to a declaration by plaintiff that the contract was at an end, corrected his prior erroneous characterization of a cancellation, to one for the Government's "convenience." In all those cases, moreover, the all-inclusive right to terminate for "convenience" was shown to exist at the time the contracting officer erroneously characterized his termination as something else.<sup>73</sup>

<sup>72</sup> 186 Ct. Cl. at 606, 405 F.2d at 1253. See also n. 5 at 609 and 1255. Nor is defendant's reliance on the earlier case of *John Reiner & Co. v. United States*, 163 Ct. Cl. 381, 325 F.2d 438 (1963), cert. denied, 377 U.S. 931 (1964), well placed. That case involved the erroneous cancellation of an award, following a ruling of the General Accounting Office. In converting the cancellation to a "convenience" termination, the court observed:

"If the contracting officer had deliberately employed the termination-for-convenience article of the contract, his action would have been entirely valid. Such termination is authorized 'whenever the contracting officer shall determine' that it is 'in the best interests of the Government.' The broad reach of that phrase comprehends termination in a host of variable and unspecified situations calling (in the contracting officer's view) for the ending of the agreement; the article is not restricted, as plaintiff contends, to a decrease in the need for the item purchased. Under such an all-inclusive clause, the Government has the right to terminate 'at will' \* \* \* and in the absence of bad faith or clear abuse of discretion the contracting officer's election to terminate is conclusive. \* \* \* " [Emphasis supplied.] [163 Ct. Cl. at 390, 325 F.2d at 442-43.]

<sup>73</sup> See *College Point Boat Corp. v. United States*, 267 U.S. 12, 16 (1925).



In marked contrast, this case involves a specially tailored provision, worded after prolonged negotiations.<sup>74</sup> Termination, even under the specific grounds expressed, was considered a remote possibility, and the parties specifically rejected the standard "convenience" provision (or any similar clause) because they contemplated the contract would run for its full 22-year term, and perhaps be extended. Nor is this a case where a contracting officer corrected *his* prior erroneous characterization of *his* default termination of a contractor, to one for the Government's convenience; nor is it a case where there existed *at the time* he erroneously characterized his termination differently, a contract right to terminate, which he exercised *before* the contract had been breached and declared at an end by the aggrieved party.

On the contrary, it was this court that determined that the Government had breached the contract, and that plaintiff was justified in declaring it at an end, and in filing suit for breach on December 24, 1970. *At that time*, far from seeking to terminate, the defendant's contract representatives were striving vigorously to avoid termination.<sup>75</sup> The breach was, moreover, founded not on a default by the contractor, but on the independent grounds of non-payment of the contract price by defendant. That breach was regarded by the court as "material and total, justifying the contractor in considering the contract at an end."

The court found, furthermore, that plaintiff had *not* waived the breach.<sup>76</sup> It was only after filing of suit for

<sup>74</sup> See findings 85-89 and corresponding text of opinion *supra*.

<sup>75</sup> See findings 139-65 and corresponding text of opinion, *supra*.

<sup>76</sup> 197 Ct. Cl. at 134, 455 F.2d at 555-56. See and *cf.* the recent decision in *Airco, Inc. v. United States*, Ct. Cl. No. 160-73, decided Oct. 23, 1974. The court stated:

"On the basis of the record we have before us on this motion to dismiss, we would have to say that the plaintiff was free, if such a move was timely made after November 15th, to declare expressly, or indicate in effect, that it con-

that breach that the Under Secretary, on January 26, 1971, purported to terminate under the limited conditions of 12.1, citing for the first time the specific language which had been negotiated and inserted in that provision. Up to that time he had strongly contended that the conditions warranting termination were not present.

As stated in *North Star Aviation Corp. v. United States*, 198 Ct. Cl. 178, 180-81, 458 F.2d 64, 65-66 (1972):

The contract did not contain a clause allowing termination for the convenience of the government and none was required to be inserted under any applicable federal regulation. \* \* \* See *G. L. Christian & Assoc. v. United States*, 160 Ct. Cl. 1, 312 F.2d 418 (1963), *cert. denied* 375 U.S. 954 (1963). ["] \* \* \* Consequent-

*sidered the contract materially breached, and at an end*, because of the Government's gross failure to order by November 15th the quantity of gas it undertook to buy. \* \* \* The question for decision is whether plaintiff actually took that course, or whether it elected, instead, to treat the contract as still viable and continuing in operation.

\* \* \*

"In this situation we hold it plain that plaintiff *did not* put an end to, or think that it had put an end to, the contract *before* the Government invoked the convenience-termination article in February 1972. \* \* \* " [Emphasis supplied.]

See also *Ling-Temco-Vought, Inc. v. United States*, 201 Ct. Cl. 135, 146 n.3, 475 F.2d 630, 637 n.3 (1973).

<sup>77</sup> Also, 376 U.S. 929 (1964), and 377 U.S. 1010 (1964). In *Christian* (160 Ct. Cl. at 11, 312 F.2d at 423), the court also confirmed that:

" \* \* \* [I]t is settled that, when the Government enters into a contract, it has rights and it ordinarily incurs responsibilities similar to those of a private person who is a party to a contract (*Lynch v. United States*, 292 U.S. 571, 579 (1934); *Perry v. United States*, 294 U.S. 330, 352 (1935)), and if the Government terminates a contract without justification, such termination is a breach of the contract and the

ly, the termination constituted a common law breach of contract. \* \* \*

Taking up the next element which defendant must also establish to support its affirmative defense, namely, that its termination notice of January 26, 1971, was in compliance with the NEPA, the answers here are largely to be gleaned from the collateral litigation pressed by the other three conservation contractors, as heretofore related.<sup>78</sup> The injunction they obtained enabled those contractors to continue deliveries of helium, and to be paid the contract price under their contracts for more than 2 years thereafter.

In affirming the granting of an injunction by the district court, the 10th circuit addressed itself to the January 26, 1971, termination notice, the only one purporting to terminate this contract. The court found it clear "that the Act [NEPA] compels the Department to comply with its provisions when action is being taken having to do with a depletable resource. \* \* \* It is undisputed that the Secretary has not considered the environmental impact and has not taken any steps to fulfill the requirements of the NEPA. Indeed

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Government becomes liable for all the damages resulting from the wrongful act (*United States v. Behan*, 110 U.S. 338, 346 (1884); *United States v. Spearin*, 248 U.S. 132, 138 (1918)). The damages will include not only the injured party's expenditures and losses in partially performing the contract, but also, if properly proved, the profits that such party would have realized if he had been permitted to complete the contract. *Broadbent Laundry Corp. v. United States*, 56 Ct. Cl. 128, 132 (1921); see *United States v. Behan*, *supra*, at p. 344. The objective is to put the injured party in as good a position pecuniarily as he would have been in if the contract had been completely performed. *Miller v. Roberston*, 266 U.S. 243, 257 (1924); *Needles v. United States*, 101 Ct. Cl. 535, 619 (1944).

<sup>78</sup> See findings 225-27, and corresponding text of opinion *supra*.

the Secretary has not even followed the regulations of his own Interior Department purporting to implement the statute \* \* \*."

About 2 years after the purported termination of this contract, when Interior prepared an environmental impact statement, and issued a second termination notice, neither document mentioned this contract. Those actions, and omissions indicate that defendant acknowledges the invalidity of the January 26, 1971, termination under contract provision 12.1, and an abandonment of the effort to terminate plaintiff's contract under that provision.

The holding in the 10th Circuit further establishes that a contract such as this cannot be terminated without compliance with the NEPA. There were 6,467,000,000 cubic feet of helium still to be delivered under plaintiff's contract when the purported termination notice was issued, and there is no way of considering this insignificant in light of the NEPA, and the decision of the 10th Circuit. These circumstances, and the holding of that court establish that compliance with the NEPA was a prerequisite to termination, and they provide a second reason why the purported termination of January 26, 1971, was invalid and ineffective.

A third element which defendant must also have resolved in its favor to carry the burden of persuasion on its affirmative defense, is that the decision to terminate plaintiff's contract was in fact "the opinion of the Secretary of the Interior," as provided in that contract. The leading case on that issue is *New York Shipbuilding corp. v. United States*.<sup>79</sup> In it the court held:

Nor can we agree that insistence on a *decision by the contractual official* is hypertechnical or unrealistic. It may be that, in some instances, the "reality" is that the designated individual merely rubber-

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<sup>79</sup> 180 Ct. Cl. 446, 385 F.2d 427 (1967).



stamps a subordinate's or superior's findings, *but we must presume that the parties intend otherwise—that they desire that in the end he put his own mind to the problems and render his own decisions.* That has been the consistent teaching of this court in the past (*see the opinions cited in footnote 5, infra*) and we shall not today sanction an erosion of responsibility by holding that it makes no difference whether or not the chosen officer does his work. \* \* \*

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Having found that the plaintiff did not receive a determination by the proper decider, we must adjudge the consequences of the defendant's failure. The court has often declared that a contractor is entitled to a finding *by the contractually agreed officer and that a decision by someone else is a nullity.* \* \* \* [Emphasis supplied.]<sup>80</sup>

Certainly the above presumption as to the intent and desire of the parties would apply even more strongly in this case, involving as it does a contract with such large financial, national and temporal considerations dependent upon an adherence to that contractually agreed procedure.

A heavy preponderance of the evidence negates the suggestion that the Secretary of the Interior<sup>81</sup> did in fact "put his own mind to the problems and render[ed] his own decisions" in issuing the termination notice of January 26, 1971. That evidence has been earlier detailed in

<sup>80</sup> 180 Ct. Cl. at 460-61, 385 F.2d 435-36, and for a comprehensive list of cases in accord, *see* n.5 at 461 and 436.

<sup>81</sup> Actually the Under Secretary, a point raised by plaintiff, but not deemed to present a serious issue. *But see & cf. United States v. Giordano*, 416 U.S. 505 (1974).

the findings<sup>82</sup> and in the corresponding section of the opinion. Suffice it to say that the Under Secretary of the Interior, aided by a highly competent and experienced staff, did in fact put his own mind to the problem and reached his own decision. But he was then obliged to render quite another decision.

It is virtually uncontroverted on this record that his termination notice was not predicated, as required by the contract, upon his opinion that circumstances permitting termination of the contract had occurred. He opposed termination up to, and even following, the date of the purported termination notice. His was, rather, an action compelled by a budgetary determination made in OMB, under a procedure not sanctioned in the contract.

As the record demonstrates, the termination action was initiated by OMB, not by Interior. Interior's current (and conservative) forecasts for the conservation program, equalled or exceeded those which it had developed 10 years before when the program was first launched. Those current forecasts were less than similar forecasts by the President's Office of Science and Technology, because Interior's estimates did not take into account technological advances which had occurred since the beginning of the program. The need for continuation of the conservation program was confirmed by the National Science Foundation, and by the prestigious National Academy of Sciences which concluded that the program might in fact be deficient to meet future needs.

Principal efforts to save the conservation program from the action initiated by OMB, were spearheaded first by

<sup>82</sup> Nos. 139 through 165. *Also see & cf. Accardi v. Shaughnessy*, 347 U.S. 260 (1954), and *D.C. Fed'n of Civic Ass'ns. v. Volpe*, 459 F.2d 1231, 1247 (D.C. Cir. 1971), *cert. denied*, 92 S.Ct. 1290, to the effect that the official designated to make decisions cannot indulge in extraneous and irrelevant considerations in making those decisions.

Interior Secretary Hickel, and then by Under Secretary Russell. No more persuasive arguments for continuation (not termination) of the program could be made than those set forth in Secretary Hickel's memorandum of April 7, 1970, earlier summarized. But Under Secretary Russell's request to OMB in late 1970, just prior to termination, was rejected with the statement that this "*reflects a decision to terminate.*" (Emphasis supplied.) The decision referred to was certainly not a decision of the Secretary of the Interior. It was a denial of his request to continue.

There followed an appeal by the Under Secretary to the President in which he characterized the conservation program as one of the five items he considered "most critical." At that eleventh hour, the Under Secretary was still urging:

The continuation of the *helium conservation program to recover and store helium in advance of need* is the only positive assurance that helium will be available in the future to meet user needs and to solve pressing environmental problems in power generation, power transmission, transportation, industrial applications, space and marine programs, and other uses, the total requirements for which are in strong prospect of increasing.

His appeal was rejected by OMB which, in the same communication, provided the specific reasons on which the Under Secretary was shortly thereafter to predicate his termination notice. Most significantly, the rejection of the Under Secretary's appeal recites that "*the decision to terminate [certainly not the Under Secretary's] successfully withstands the [Under Secretary's] appeal.*" And it adds that the "*budget decision assumes that the termination action will be a Secretarial determination, with announcement in early January, that circumstances exist which satisfy the termination provisions of the contracts.*" (Emphasis supplied.)

Other prominent and cognizant officials of Interior were in accord with the Under Secretary's position. None was opposed. When they finally aided him in developing a contrary position, it was for the purpose of wording a termination notice in harmony with the contract provision after litigation had begun and termination had become unavoidable.

The official budget message sent to the printer *before* the termination notice was issued, had already reflected a secretarial decision to terminate. Significantly, on the day preceding termination, the Under Secretary instructed that:

The cancellations have to be handled in such a manner that (the decision to cancel) is the decision of the Secretary of the Interior and not the decision of the President or OMB or anyone else. \* \* \*

The record reflects no time in which the Under Secretary could have studied and reached a reasoned opinion, especially one contrary to the official views he had expressed up to that time. At trial, he and other officials were still of the view that this long-range conservation program should be continued if funds were available.

All the above considered, the conclusion is inescapable that plaintiff did not receive a decision from the "contractually agreed officer."

The remaining tests<sup>83</sup> which the Government's affirmative defense must meet are best expressed in the terms of contract provision 12.1, and are also best discussed together. Plaintiff was entitled to the opinion of the Secretary of the Interior that there had occurred "(1) *the discovery of large new natural helium resources*, or (2) *a substantial diminution in helium requirements* \* \* \* or *any other circumstance of similar nature*" which "would

<sup>83</sup> In the disjunctive.



make the continued operation of Seller's plant and the continued purchase of helium-gas mixture extracted therein unnecessary to accomplish the purposes of the Act \* \* \*." (Emphasis supplied.)

Firstly, the Under Secretary's termination notice reflects far too narrow a view of the "purposes of the Act."<sup>84</sup> Latching upon the phrase "essential Government activities," appearing in one section,<sup>85</sup> and further narrowing the meaning of that phrase to refer only to the five specific Federal agencies which were principal purchasers of helium when the act was under consideration, it is argued that the "purposes of the Act" have been accomplished, if it can be demonstrated that the long-range future requirements of those five agencies have been met.

Even assuming for the sake of discussion that there was only one purpose of the act, and that it was the one above-argued, the record, even so narrowly construed, demonstrates that there has occurred no change in cir-

<sup>84</sup> See findings 41-69 and corresponding text of opinion *supra*. Interior took a far different view throughout the administration of the contract. For example, in supporting its appropriation request for fiscal year 1964, Interior reported to the Senate:

"The helium conservation program is not a stockpiling program aimed at assuring an adequate supply of helium for some predetermined uses and for some predetermined period of time. It is a conservation program aimed at curtailing the wastage of valuable natural resource in order that the resource will be available to future Americans for whatever purpose and at whatever time it is needed. In this circumstance, it is necessary to rely heavily upon scientific opinion rather than extrapolations of demand to consider whether the program is required." [*Hearings Before Subcommittee of Senate Committee on Appropriations, H.R. 5279, 86th Cong., 1st Sess. 1629 (1963).*]

<sup>85</sup> Which was added in Committee for unrelated reasons and without any particular emphasis attached to those three words at the time.

cumstances supporting termination of the conservation program. The future needs of those five agencies alone are somewhat larger than they were estimated to be when the program was recommended by Interior and enacted by the Congress.

It is nevertheless deemed worthwhile to treat briefly with defendant's argument that the "purposes of the Act" are to be that narrowly construed. Throughout its consideration in Committee and on the floor of both Houses of Congress, those purposes were viewed much more broadly than is now urged in the termination notice, and by defendant in this litigation. In recommending the legislation to the Congress, Interior noted that consumption of helium had risen to 80 times the 1937 level, and that 70 percent of this was by the five named Federal agencies. Other uses, both Federal and non-Federal, were predicted.

The Committee report on the House bill, when alluding to the single section in which the phrase "essential Government activities" appears, emphasizes only the need to foster private enterprise, and to move away from the Government monopoly in helium production which had theretofore prevailed. The reference to an assurance of a sustained supply for "essential Government activities" appeared as a *minimum* purpose of the act, not as the total "purposes of the Act."

The phrase had in fact no particular significance, and it was not mentioned in Committee. Former Representative Udall, (later Secretary of the Interior), who introduced that section<sup>86</sup> in the House, confirmed what is already plainly

<sup>86</sup> Section 14 (later § 15). As Secretary when the contract was signed, his understanding represented that of the Government, as a signing party. *Macke Co. v. United States*, 199 Ct. Cl. 552, 467 F.2d 1323 (1972). As a former Representative, his testimony and that of former Representative Rogers, who introduced the 1960 Helium Act, was merely confirmatory of the legislative history which is amply shown in the record. See *Lionberger v. United*

shown by the House and Senate reports, namely, that the purposes of the act were to provide a broad, long-range conservation program for all national purposes. Nowhere in the legislative history is a distinction drawn between the needs of the "Government" and of the Nation as if they were separate entities. It was merely emphasized that essential Government needs were to have a priority, a priority which was to be assured by condemnation and licensing authority if necessary. These purposes were confirmed by speeches on the floor of both Houses, and by the testimony of the representatives of Interior recommending passage.

In the course of the hearings, heavy emphasis was laid on the long-range future, and on uses of helium then in the earliest stages of development, or not then in contemplation. Since the program was intended to be self-liquidating, based on exclusive sales to the Federal market, that policy was also offered by one witness as a reason for the reference to "essential Government activities."

A reading of the legislative history, and of the act itself, leads to the conclusion that its purposes were to establish an effective long-range helium program for the conservation, in advance of need, of an important natural resource to meet the future needs of the Nation as a whole, when reserves would no longer be adequate to meet then current demand. Included within those general purposes was the assurance of a sustained supply for essential Government needs, as a minimum. Those needs had a priority. Govern-

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*States*, 178 Ct. Cl. 151, 371 F.2d 831, cert. denied, 389 U.S. 844 (1967); *New York, Chi. & St. L. R.R. v. United States*, 166 Ct. Cl. 159, 165-68, 331 F.2d 865, 870-72 (1964). See also *United States v. Zacks*, 375 U.S. 59, 62 (1963); *United States v. Universal CIT Credit Corp.*, 344 U.S. 218, 221 (1952); *Harrison v. Northern Trust Co.*, 317 U.S. 476, 479 (1943); *United States v. American Trucking Ass'ns.*, 310 U.S. 534, 543 (1940); and *United States v. Dickerson*, 310 U.S. 554 (1940).

ment needs were, moreover, not limited to the five Government agencies then comprising the principal purchasers of helium, and it was contemplated that other Government agencies might develop helium requirements. Other non-governmental needs were forecast. Among the principal legislative purposes was an intent to avoid waste of this dwindling resource, to encourage private enterprise in that endeavor, and to foster a conservation program which would be self-liquidating.

These legislative purposes go well beyond the single limited purpose now urged by defendant.

The parties agreed in the contract that two specifically stated circumstances would warrant termination. One of these was the "discovery of large new natural helium resources." Each of the words quoted must be regarded as important since they resulted from comprehensive negotiations. The facts relating to this termination test have been exhaustively set forth in the findings.<sup>67</sup> They demonstrate that there have been no discoveries of new natural resources, and that those cited in the termination notice are neither new, nor large, nor reliable.

The largest resources of helium in the world are those in the Hugoton-Panhandle gas from which helium was being extracted under this conservation program, until it was terminated. That natural gas, and all other marketable gas in the country, is depleting as it is marketed for fuel. The 1960 Conservation Act and the conservation program and contracts were specifically designed to meet helium needs not now, but in the future when our gas supplies will have dwindled to the point that demand will substantially exceed supply.

Recovery of helium from the atmosphere has never been seriously regarded because the cost is prohibitive, the process uses enormous amounts of energy, and it results

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<sup>67</sup> Nos. 194 through 218, and corresponding text of opinion *supra*.



in unacceptable pollution. Besides, atmospheric recovery is not a newly discovered resource, as the contract contemplates in specifying grounds for termination.

In part, the termination notice relies on helium which had been purchased and stored under this conservation program up to the time it was terminated. That is, of course, circular reasoning. The conservation program contemplated that it would run until the mid-1980's, and provide a reservoir for national requirements during the period following the end of the program. It was terminable upon the discovery of large new natural resources. Conservation of *part* of the very helium contemplated by this contract, can hardly be regarded as a discovery of large new resources warranting the contract's termination.

The natural gas in widely scattered "shut-in" wells, cited as large new discoveries, similarly fails to persuade. Much of it was known of when the program was enacted, and it is not newly discovered. It is contained in 98 small, isolated gas fields over 10 states, and the findings in this case illustrate the difficulties in gathering helium-bearing gas to a point where it can be economically extracted, purified and stored. Moreover, shut-in fields are subject to depletion, now that higher prices and dwindling supplies make it more economically attractive to sell the gas as fuel.

In the last analysis, most of the natural gas being processed today for fuel and related purposes is expected to be gone before the end of the century, the period at which this conservation program was aimed. The prospect sometime in the future of discovering a helium-bearing gas reserve as large as that represented by the Hugoton-Panhandle fields, is poor. There are certainly no such discoveries now on which to support a termination notice. Interior estimates that the Hugoton-Panhandle gas fields which were being exploited under this helium conservation program will have been depleted by 1985.

The only specific new discovery cited in the termination notice was the previously mentioned Tip Top field located in a mountainous region of Wyoming. Although it was discovered the year this contract was signed, it can be deemed newly discovered because analysis had not been concluded until 1965. But reliance on it as a future source of helium is highly speculative. Four to six additional exploratory wells would be required to prove the field. Under Secretary Russell did not consider it proved, nor a large reserve. Even the estimate of 3 b.c.f. at Tip Top, if proved, would be less than 0.3 percent of the total United States reserves, and less than the amount that was being conserved *annually* under this conservation program. Furthermore, Tip Top's mountainous terrain and remoteness from storage, transportation, purification and liquefaction facilities make it difficult to guess what it would cost to produce, transport and store helium from that field. Tip Top cannot on this record be regarded as the discovery of a large new natural helium resource within the contemplation of this contract.

Interior's most recent estimates of helium availability prior to termination were contained in a 1969 report. No new discoveries or evaluations were made from then until the termination notice of January 26, 1971. During that period, the Secretary and Under Secretary were strongly supporting the helium conservation program. Far from claiming large new discoveries, they were warning that future requirements might outstrip available supplies.

The other specifically stated circumstance agreed upon as warranting termination was "a substantial diminution in helium requirements." Here, too, the words selected were important. The termination notice relies upon a fluctuation in *current sales* just prior to termination, as a substantial diminution in *requirements*. There is no support for that reading of the quoted words in the contract, nor in the history of this long-range conservation program, nor in its administration up to that point. At the time the

1960 act was passed, it was assumed the Nation had at least a 25-year supply of helium without a conservation program. That is why the program was adopted to provide for the period beyond that.

Here, too, in their efforts to save the program, the Secretary and Under Secretary had theretofore been emphasizing its basic intent of conserving helium for future needs, in the period following completion of these contracts, when helium resources would be exhausted. Secretary Hickel made note of the fact that the BOB arguments looked only to the short-term. And Under Secretary Russell, in his final appeal, stated that "the continuation of the helium conservation program *to recover and store helium in advance of need* is the only positive assurance that helium will be available *in the future* to meet user needs \* \* \* the *total requirements* for which are *in strong prospect of increasing*." (Emphasis supplied.)

Their view was consistent with the concept of conservation, and with the long-range-future view of this program and of this contract which had consistently prevailed until OMB introduced the reference to *current sales* as a measure of helium requirements.<sup>58</sup> Other than in the termination notice itself, there have been no official forecasts by Interior or any other agency suggesting that helium usage will not *increase* above current levels. Estimates have differed solely over the degree of increase.

These future requirements are amply supported by the brief description of the known current and projected uses for helium earlier listed and detailed in the findings. Just the five Government agencies, upon which the termination

<sup>58</sup> See findings 14 through 103, 132 through 193. Moreover, even the current sales figures offered are unreliable because they do not include sales by Interior to commercial customers, nor sales by private producers to Government agencies, their contractors or others. The self-liquidating features of the program were already being circumvented by the latter type of sales.

notice relies to show a diminution in need, projected annual requirements in excess of 2.13 b.c.f. by 1990. It is noteworthy that in 1960 Interior supported the total conservation program by projecting an annual national need of 2 b.c.f. by the year 2000.

At the same time that the termination notice was relying on a diminution in requirements, official Interior documents were forecasting an increase in annual need to between 3 and 5 b.c.f. by the year 2000. Studies of the respected Stanford Research Institute, on which both parties have relied, forecast still larger requirements. Defendant's argument that, by reason of its termination of the helium program, helium will be in short supply in the future, thus raising its price to the point where it will not be used because it cannot be afforded, is the same type of circular reasoning alluded to earlier.<sup>59</sup> The record simply does not show a diminution in helium requirements, substantial or otherwise.

Referring to "any other circumstance of similar nature" warranting termination, the notice, as of January 26, 1971, relies upon improvements in technology making possible the recovery of helium from leaner sources. The notice cites this presumably as a circumstance similar to "the discovery of large new natural helium resources." Here again, one is asked to accept circular reasoning. The realization of one of the planned objectives of the contract, is offered as a reason for its earlier termination.

That reason would support a "convenience" termination, had the contract contained the earlier-discussed standard article permitting termination "at will," but it is insufficient to support the exercise of this conditional provision. The development of advanced technology was an avowed objective of the negotiating parties during the

<sup>59</sup> With respect to the citing of contract reserves up to the date of termination, as newly discovered resources.



prolonged negotiations.<sup>90</sup> Plaintiff agreed to and did extend the technology and the state of the art to permit economical recovery of helium from leaner gas streams than theretofore processed. It did so at its own risk, and there were numerous disappointments before the process finally proved itself. Any new Government plant built today would employ essentially the same technology as was developed under this contract.

The Government's chief negotiator testified:

\* \* \* We contemplated that they would do that and we wanted them to do that, and certainly we didn't contemplate that if they did what we intended for them to do in the contract it would be a cause for terminating the contract.<sup>[91]</sup>

Moreover, gas lean in helium is rich in hydrocarbons so that "lean" gases will also have been largely depleted as fuel by the year 2000.

Finally, the second termination notice some 2 years later did not affect this contract, and was conditioned upon an environmental impact statement which was also not directed to this case. Moreover, circumstances discussed in detail in connection with the Russell termination notice which embraced this contract, had not appreciably changed when the second notice was issued,<sup>92</sup> and the Secretary did not cite specified circumstances "which in the opinion of the Secretary of the Interior, would make the continued operation of Seller's [plaintiff's] plant and the continued purchase of helium-gas mixture extracted [in plaintiff's plant] unnecessary to accomplish the purposes of the Act."

<sup>90</sup> See findings 75, 78, 87 and 219 through 223.

<sup>91</sup> See also findings 85, 86, and 88 through 90.

<sup>92</sup> See findings 228 through 242, and corresponding text of the opinion *supra*.

That concludes consideration of the issues relating to the Government's affirmative defense in which it is argued that plaintiff "is not entitled to any payment from defendant for helium produced by it following the termination of the contract."<sup>93</sup> It is a defense not supported by the evidence of record nor by settled legal principles, and it therefore must be rejected.

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<sup>93</sup> Defendant also appears to argue that circumstances *might* have arisen in the future permitting termination. This argument has been discussed above in connection with the treatment of the validity of a purported termination after breach. In this further argument, defendant appears to admit that the Secretary could no longer terminate under the contract after breach, but it argues, in another attempt to shift the burden of proving defendant's affirmative defense, to plaintiff, that the latter has not "established by clear and direct proof that it would not have been disabled from performing because of the defendant's right to terminate *were* any of the conditions specified for termination in Article XII to occur." (Emphasis supplied.) This speculative and conjectural argument has already been discussed above. As above discussed, the right to terminate is to be evaluated as of the time the breach occurred, even when the open-ended "convenience" termination clause is present. See *G. C. Casebolt Co. v. United States*, 190 Ct. Cl. 783, 786-87, 421 F.2d 710, 712 (1970). In this case, no right (or even desire) to terminate under this special provision existed at the time the contract was breached, or even thereafter, as this formidable record demonstrates. See & cf. *David J. Joseph Co. v. United States*, 113 Ct. Cl. 3, 82 F. Supp. 345 (1949); *Hammond v. CIT Financial Corp.*, 203 F.2d 705, 707-08 (2d Cir. 1953); *Chevrolet Motor Co. v. Gladding*, 42 F.2d 440 (4th Cir.), cert. denied, 282 U.S. 872 (1930); and *In re Petroleum Carriers Co.*, 121 F. Supp. 520, 525-27 (D.C. Minn. 1954).

It is well-settled that damages which are remote, speculative and conjectural are not recoverable. It is equally well-settled that a valid claim for damages should not be denied for reasons which are equally remote, speculative and conjectural.

*Computation of Damages for  
Breach of Contract at Common Law*

The remaining issues in the case relate to the computation of damages at common law for this acknowledged breach of contract.<sup>94</sup> The basic rule is stated and restated by the authorities in several ways, all reaching the same essential conclusion. In RESTATEMENT OF THE LAW, CONTRACTS, it is expressed as follows:

In awarding compensatory damages, the effort is made to put the injured party in as good a position as that in which he would have been put by full performance of the contract \* \* \*.<sup>[95]</sup>

<sup>94</sup> See notes 2 through 5 *supra*.

<sup>95</sup> Section 329, Comment a. In 11 WILLISTON, CONTRACTS § 1352, it is stated as follows:

“*Recovery of Full Value of Defendant’s Performance Where Plaintiff’s Performance Is of No Value.* If excuse from the performance under a bilateral contract to which a plaintiff is bound will be of no pecuniary advantage to him, he may recover the full amount promised him by the defendant even though, owing to the defendant’s fault, he himself has not rendered the performance for which he contracted.”

(Here, of course, plaintiff has rendered and continues to render the performance for which it contracted. See findings 7, and 104 through 131.)

And in *Anderson*, UNIFORM COMMERCIAL CODE, § 2-708:13 (2d ed.), it is stated:

“*No market value.*

“If there is no market value for which the goods can be sold, the seller is entitled to the full amount of damage which he has sustained by the breach of the contract \* \* \*. Whatever the reason that the goods have no market value, without the seller’s fault, damages are the entire contract price without deduction \* \* \*.”

(In this case because of the nature of this conservation and storage program for long-range future requirements, its magni-

This contract provides<sup>96</sup> that “the United States agrees to pay for, *whether taken or not*, all of the helium-gas mixture produced in Seller’s plant and tendered for delivery to the United States \* \* \*.” (Emphasis supplied.) As earlier described<sup>97</sup> plaintiff has continued to tender helium to defendant since September 28, 1972, when the latter turned off the valve to its pipeline and storage reservoir.

In accordance with the basic rule, plaintiff claims entitlement to the full contract price because it cannot avoid any costs of performance. Its helium facilities are in fact fully and inextricably linked with LPG, ethane and petrochemical facilities, and must continue in operation whether the helium is taken by defendant or vented into the atmosphere.<sup>98</sup> This integration was contemplated by the parties as the most practical method of implementing their respective plans. It was encouraged by defendant for the mutual benefit of the parties and it was expressed in a contract provision.<sup>99</sup>

The cited findings support the foregoing conclusions and no others, and they illustrate the nature and magni-

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tude, and the ownership of the only storage facility by defendant, these goods have no current market value except to the defendant. See findings 5 through 7, 261 through 267.)

<sup>96</sup> Article II, 2.1 (and 2.4).

<sup>97</sup> See text *supra* at notes 6 and 7.

<sup>98</sup> See findings 104 through 131 and related text of opinion *supra*.

<sup>99</sup> See findings 14 through 19; 30; 31; 35 through 40; 70, 72 through 75; 78 through 80; 85 through 90; 95 through 97. The contract provides (Article XXXI, 31.3):

“In connection with Seller’s plant, Seller at its sole risk, cost and option may construct and operate, or cause to be constructed and operated, facilities for extracting products other than helium from the natural gas processed through said helium plant.”



tude of these interrelated and interreliant industrial facilities. All of these operations were in implementation of Northern's original plans. They resulted from negotiations between defendant and Northern. They were executed by Helex, Gas Products, and Petrochemical, as subsidiaries and instrumentalities of Northern. They were fortified by appropriate agreements between subsidiary and parent<sup>100</sup> to insure compliance with this contract with the Government, and with FPC requirements.

Northern owns and operates a 19,072-mile natural gas pipeline on which these facilities are located.<sup>101</sup> Capital investment in the system exceeds \$300 million. These integration plans, discussed, endorsed and encouraged by defendant's representatives in their negotiations with Northern, were major criteria in Northern's decision to participate in the conservation program. Defendant's present position that all of the foregoing is irrelevant, seeks to exalt form over substance, and is an argument devoid of merit.<sup>102</sup> It is clear that plaintiff cannot avoid any costs

<sup>100</sup> Findings 104 through 131. These contracts should be considered together. Cf. *Helvering v. Le Gierse*, 312 U.S. 531, 540 (1941). For example, Helex was obligated to Northern to operate the helium facilities for 22 years; and Northern was obligated to supply gas to Helex for 22 years. Because of the intricate integration of industrial facilities described in the cited findings, and corresponding text of opinion *supra*, a shut-down of the helium facilities would shut down ethane extraction and petrochemical operations; be in violation of the FPC order and violate the implementing intersubsidiary and parent agreements.

See & cf. *Owens-Corning Fiberglas Corp. v. United States*, 190 Ct. Cl. 211, 236-38, 419 F.2d 439, 453-55 (1969).

<sup>101</sup> By way of illustration, Northern and its subsidiaries had sales totaling \$636,544,000 in 1972.

<sup>102</sup> Defendant also appears to argue that the "risk" mentioned in contract provision 31.3 (note 99 *supra*) was a seller's risk that the buyer might breach the contract. That is not the risk plaintiff assumed. It is clear that the "risk" referred to in that provision was the risk that this novel and complex technology might present

of performance,<sup>103</sup> and that it is entitled to the contract price.<sup>104</sup>

The ability of the plaintiff to extract and tender helium to defendant throughout the remainder of the contract period ending August 15, 1983, has been stipulated, as has the fact that 6.467 b.c.f. of contained helium would

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problems, as it in fact did. See findings 112 and 113. Plaintiff assumed that risk, and eventually overcame those technical difficulties. See & compare contract provisions 4.1 and 4.2 assigning similar "risk." Even had the contract exculpated the defendant for its breach (which it does not), such provisions are held to be unenforceable. See *Freedman v. United States*, 162 Ct. Cl. 390, 396, 320 F.2d 359, 362 (1963) and *Ozark Dam Constructors v. United States*, 130 Ct. Cl. 354, 359, 127 F. Supp. 187, 190 (1955). To adopt defendant's argument would render the termination provision 12.1 meaningless and mere surplusage.

<sup>103</sup> Except for about \$11,000 in fuel costs (finding 131) which is not significant in terms of this case.

<sup>104</sup> See *J. D. Hedin Constr. Co. v. United States*, 197 Ct. Cl. 782, 803, 456 F.2d 1315, 1327-28 (1972); *Kearns v. Gay Apparel Corp.*, 232 F. Supp. 475, *aff'd* 341 F.2d 297 (4th Cir. 1965); *Georgia Power & Light Co. v. Fruit Growers Express Co.*, 190 S.E. 669 (1937); and quotation from *G. L. Christian & Assoc.*, note 77 *supra*. See also 11 WILLISTON, CONTRACTS § 1347:

"Illustrations of Consequential Damages Allowed. When a defendant has reason to know, before entering into the contract in question, of facts indicating that unusual damages will follow or may follow his failure to perform his agreement, he is liable for such damages \* \* \*."

Also, 4 CORBIN, CONTRACTS § 946, and 5 CORBIN, CONTRACTS § 1038.

In *Memphis, Tennessee v. Ford Motor Co.*, 304 F.2d 845, 853 (6th Cir. 1962), the plaintiff (as in this case) had large investments in facilities that had to continue in operation (a steam generating plant for which \$163 million in bonds had been issued). After defendant sold its plant and moved from Memphis prior to expiration of a 5-year contract to purchase electricity, the court held that:

have been delivered during that period, at a total contract price of \$80,255,000, unadjusted for the wholesale price index.<sup>105</sup>

There is a conflict, however, as to what years should be selected as a base period from which to predict or project the probable movement of the wholesale price index through 1983, and its consequent impact on the contract price had the contract been permitted to run to completion.<sup>106</sup> It is defendant's contention that the base period for extrapolating the 1971-83 behavior of the wholesale price index, should be the period 1947-71.<sup>107</sup>

Plaintiff urges any of three different base periods, observing that defendant's projection is already 8.6 index points below the *actual* published index for 1972.<sup>108</sup> Alter-

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" \* \* \* [T]he district court was not in error in holding that the City of Memphis was entitled to recover all amounts due for minimum bills for the remainder of the contract term."

*See also, Seatrains Lines, Inc. v. United States*, 99 Ct. Cl. 272 (1943); *Buchman v. Millville Mfg. Co.*, 17 F.2d 983 (2d Cir. 1927); *Russell v. Barnes Foundation*, 52 F. Supp. 827 (D.C. Penn. 1943); *aff'd*, 143 F.2d 871, *cert. denied*, 323 U.S. 771 (1944); *Lannom Mfg. Co. v. Strauss Co.*, 235 Iowa 97, 15 N.W.2d 899 (1944); and the prior opinion in this case, *Northern Helex Co. v. United States*, 197 Ct. Cl. 118, 129, 455 F.2d 546, 553 (1972).

<sup>105</sup> The contract provides for such adjustment. *See* finding 245.

<sup>106</sup> The parties are otherwise in agreement on method and mathematical techniques in developing a projection. Finding 246.

<sup>107</sup> No particular reason is given for choosing 1947 as a point of beginning. Possibly it is because it provides a base period of about 25 years.

<sup>108</sup> Actually all projections argued at trial are below reality in light of today's well-known inflationary pressures. Plaintiff's expert has pointed out with respect to defendant's projection that:

"This is optimism about the projection for stabilization (more accurately, a moderate, orderly rate of price increase) which goes beyond even the most sanguine political aspirations."

nate A uses the base period 1947-59, and Alternate B, the period 1967-71. Both alternates exclude the period 1960-66 as an unusual and untypical period of economic stagnation during which the wholesale price index remained virtually unchanged, rendering that period unrepresentative of the next 10 years.<sup>109</sup>

What can be regarded as Alternate C was also suggested by plaintiff at the close of the trial. It observes that the Government employed a base period starting in 1941 when it was negotiating this contract in 1961 (for the purpose of anticipating the maximum amount the Government would owe in any 1 year under this escalation provision). Plaintiff therefore suggests the base period 1941 to 1971. From this longer, and therefore more representative base period, it extrapolates an escalation figure falling somewhere between the higher figure produced by its Alternate A, and the lower figure resulting from use of defendant's suggested base period.

On September 19, 1961, about a month after this contract was signed, the Government's chief negotiator described the price features of the contract in a memo to the files. In it he noted that the contract required the Government to pay up to \$9,500,000 a year, and that this figure was developed from probable contract price increases projected from a 1941-60 history of the wholesale price index. On this record, the 1941-71 base period is considered the most representative. It is the longest, and therefore it

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<sup>109</sup> A report by plaintiff's expert observes that this Nation's current monetary policy of providing adequate credit supplies for satisfactory employment levels, our social commitment to substantially full employment, the growing population and industrialization which place pressures on scarce resources, the energy crisis, and the social and environmental costs, will inevitably push wholesale prices upward at a rate at least as great as the period 1967-71.

These are references to inflationary pressures which are currently discussed.



best reflects peaks and troughs in the economy. Furthermore, the 1941 starting date is one on which both parties have at one time or another placed their reliance.

Adjusted in accordance with contract provision 7.3(b), and using a wholesale price index projection with a 1941-71 base period, the contract price from December 24, 1970, through August 15, 1983,<sup>110</sup> is \$96,625,000.<sup>111</sup>

Plaintiff observes in its brief that "[p]resumably, when the Government pays the full purchase price as damages, it will turn the pipeline valve back on and store the helium for its own account and the future benefit of this Nation."<sup>112</sup> Noting that this court has achieved the same net result by entering a monetary judgment for damages and requiring the plaintiff to execute a deed conveying to the

<sup>110</sup> The contract expiration date.

<sup>111</sup> In making the above computation in August 1973, plaintiff employed a wholesale price index figure for 1973 of 164.1. As shown by Bureau of Labor Statistics, the actual rise in that index for 1973 was to 170.9. Nor does this computation take into account actual increases since 1973, but merely estimates them as an extrapolation of the base period.

Determination of plaintiff's costs of performance (as distinguished from contract price) is irrelevant to plaintiff's claim. The claim is predicated upon total integration of facilities, as earlier discussed. This precludes discontinuance of operation of the helium extraction facility, and of the costs of operation. (See text following note 97 *supra*.) Those costs of operation have, nevertheless, been separately computed at \$43,067,413 (unescalated for the wholesale price index), and at \$51,858,859, escalated in accordance with the wholesale price index.

<sup>112</sup> A remedy similar to that described in the UNIFORM COMMERCIAL CODE §§ 2-703-04; and in 11 WILLISTON, CONTRACTS § 1419B:

"*Enforcement of Output and Requirements Contracts.* Contracts for the sale and purchase of the entire output of a factory or shop will ordinarily be enforced through the issuance of a decree of specific performance that the seller deliver, or that the purchaser accept delivery and pay for, the commodity constituting the subject matter in question."

Government the rights which were purchased,<sup>113</sup> plaintiff further observes that such compulsion is unnecessary here.

\* \* \* [B]ecause Northern Helix stands willing to deliver helium to the Government until August 15, 1983, if it recovers its damages equal to the contract price. In sum, entry of judgment for Northern Helix for the full contract price results in the Government's receiving the helium which, in its hands, will equal or exceed in value the damages paid to Northern Helix.

These observations suggest, in turn, an additional observation. The difficult issue of computing the escalation factor under contract provision 7.3(b) as above analyzed, and the difficult issue of a discount factor for present value, as urged by defendant and hereinafter discussed, can both be avoided if any judgment is made payable in installments, corresponding in time and amount to the contract installments which would have been due and payable under the payment provisions, had the contract continued in effect.

Since defendant controls the valve through which helium enters defendant's pipeline and storage system, and since plaintiff has continued to tender helium at the valve, and since the contract provided that payment would be made for helium "whether taken or not," a judgment payable in installments represents one method of avoiding difficult issues relating to amount of damages, without in any way suggesting a continuation of this contract which has been adjudged at an end.

As just above mentioned, defendant has raised the issue that the present payment of amounts which would have

<sup>113</sup> Citing *Drakes Bay Land Co. v. United States*, 191 Ct. Cl. 389, 424 F.2d 574 (1970); *Jensen v. United States*, 158 Ct. Cl. 333, 342, 305 F.2d 444, 449 (1962); and *Ferrell v. United States*, 49 Ct. Cl. 222, 224 (1914).

otherwise been due over a period of time in the future, confers an economic benefit which should be reflected in an appropriate reduction. While not disagreeing with that basic concept, plaintiff urges that it has no application here. It points out that any such economic benefit is offset by the interest on past due payments which it cannot recover; by the immediate recapture by Federal and state tax authorities of about 50 percent of any present payment made; and by the costs of this litigation.

It is concluded that a reduction to take account of present value, is in order.<sup>114</sup> As stated in the *Chesapeake* case

<sup>114</sup> See 11 WILLISTON, CONTRACTS § 1397.

"Anticipatory breach does not change the nature of the contract, and the normal rule of damages is, therefore, the same as if the breach had not taken place until the time fixed in the contract for performance. \* \* \*"

See also, *Chesapeake & O. Ry. v. Kelly*, 241 U.S. 485, 489, 491 (1916):

"\* \* \* It is self-evident that a given sum of money in hand is worth more than the like sum of money payable in the future. \* \* \*

. . . . .

"We are not in this case called upon to lay down a precise rule or formula, and it is not our purpose to do this, but merely to indicate some of the considerations that support the view we have expressed that, in computing the damages recoverable for the deprivation of future benefits, the principle of limiting the recovery to compensation requires that adequate allowance be made, according to circumstances, for the earning power of money; in short, that when future payments or other pecuniary benefits are to be anticipated, the verdict should be made up on the basis of their present value only."

In accord, *Sleeman v. Chesapeake & O. Ry.*, 414 F.2d 305 (6th Cir. 1969); and *Richman v. Joray Corp.*, 192 F.2d 660, 663 (4th Cir. 1951). See & cf. *Paris v. Remington Rand, Inc.*, 101 F.2d 64, 68 (2d Cir. 1939); *McLaughlin v. Union Leader Corp.*, 100 N.H. 367, 127 A.2d 269, 273 (1956), cert. denied, 353 U.S. 909, rehearing denied, 353 U.S. 943 (1957).

cited in the footnote, it is difficult to enunciate a precise rule or formula, and any such reduction in this case must be predicated on certain assumptions, for ease of calculation. Amounts which would have been received monthly during each remaining year of the contract, had it continued to completion, are assumed to have been paid in total in mid-year. Payment of judgment in this case in mid-1974 is assumed; and the present value of sums assumed to have been received in the middle of each year subsequent to 1974, is therefore calculated relative to mid-1974.<sup>115</sup>

A 6 percent discount rate is assumed as reasonable in light of current interest rates on safe, long-term investments. That rate has the implied acquiescence of plaintiff although, as above-stated, plaintiff opposes any reduction for present value for the reasons stated.

With these assumptions, the remaining contract price<sup>116</sup> is reduced from \$96,625,000 to \$81,677,725, as computed in finding 259.

In addition to its efforts to mitigate by its continuing offer to deliver and store helium without prejudice to either party in this litigation,<sup>117</sup> plaintiff has since December 24, 1970, negotiated with the major helium marketers in the United States for the sale of its production, but without success. It has also negotiated with foreign firms, and employed consultants to study foreign markets. Its efforts

<sup>115</sup> There is, of course, no discount for the present value of payments due for the years 1970 through 1974.

<sup>116</sup> Escalated in accordance with the wholesale price index as heretofore discussed.

<sup>117</sup> See text following note 5 *supra*.



have resulted in one sale, to Kansas Refined Helium at Otis, Kansas, in the net amount of \$2,395,160.<sup>118</sup>

This relative lack of success in its efforts to sell helium on the open market is not difficult to comprehend. It was the intent of the 1960 Helium Act and of the conservation program and contracts which grew out of it, to create a helium production capacity many times greater than necessary to meet current demand, because its fundamental purpose was to produce and conserve helium for the long-range future and in advance of need. As a result, just one of the other conservation contractors alone,<sup>119</sup> has sufficient production capacity to supply substantially all current helium demand.

Moreover, additional helium is still produced by Interior, and by private companies which did not participate in the conservation program. With the termination of that huge program, helium which would otherwise have been conserved for the post-1985 market, is available for current sale and is flooding the current market.

Neither Northern, nor Helex, nor any other Northern subsidiary owns purification or liquefaction facilities. Its competitors do, and they also have marketing facilities. Plaintiff's conservation contract was for "crude" helium, that is, 80 percent helium and 20 percent nitrogen and its industrial facilities, as earlier-described, are de-

<sup>118</sup> Against which are offset sales expenses in 1971 and 1972 of \$13,032. Note also that the burden of showing mitigation possibilities is on defendant. *See*, 25 C.J.S. § 97; *T. C. Bateson Constr. Co. v. United States*, 162 Ct. Cl. 145, 188, 319 F.2d 135, 160 (1963); *Iowa-Wisconsin Bridge Co. v. United States*, 114 Ct. Cl. 464, 509, 84 F. Supp. 852, 866, (1949), *cert. denied*, 339 U.S. 982 (1950). *See also*, 5 CORBIN, CONTRACTS § 1039 at 251.

<sup>119</sup> With purification and liquefaction facilities, *e.g.*, Cities Service Helix Company.

signed to that end. Interior performed the purification function on the helium it purchased.

The capital expenditures necessary to provide purification, liquefaction and marketing facilities for Helex would not be warranted in today's market. They would not be justifiable on the basis of potential recovery from current sales. Nor would the development of independent, private, long-range, conservation and storage facilities by plaintiff be economically feasible. Interior's Cliffside storage field<sup>120</sup> is the only major helium storage area in the United States.

Plaintiff has no storage facilities available to it and a preliminary survey has disclosed no feasible storage as an alternative to Cliffside. Between December 24, 1970, and September 28, 1972, plaintiff stored 832 m.m.c.f. at Cliffside, for which it was obliged by Interior to pay \$502,545 in storage charges.<sup>121</sup> Interior refused to store helium after September 28, 1972, absent an agreement by plaintiff to the terms of storage offered by Interior.

When these storage terms and conditions were coupled with plaintiff's continuing losses flowing from termination of its contract, they were found to be confiscatory. Moreover, the longest term storage agreement offered by Interior was 10 years. A minimum 25-year agreement was considered necessary to assure that helium could be stored until it could reasonably be expected to be sold as helium conserved for long-range future needs.

Storage by plaintiff at Cliffside, and payment of sizable storage charges would, in any event, be highly speculative. All transportation and sale of helium is subject to the control of the Secretary of the Interior, who can ac-

<sup>120</sup> Described in finding 5 *supra*.

<sup>121</sup> Excluding \$25,758 allocable to volumes sold by plaintiff to its one private purchaser.

quire it by eminent domain, and prevent what he deems to be nonessential or wasteful use. The export of helium is likewise subject to Federal controls. All Federal needs for helium are first to be satisfied from Government-owned helium.

Because of the total integration of its facilities as earlier detailed, plaintiff has had to continue to extract helium since December 24, 1970. It has continued to identify it with this contract and to tender it to defendant. Prior to the date of breach, all helium produced by plaintiff was delivered to the Government as required by its contract. Since breach, all attempts by plaintiff to convince Interior to store the helium being produced pending the outcome of this litigation, and without prejudice to either party, have been unsuccessful, despite defendant's obligation under the contract (provisions 4.2 and 4.3) to operate and maintain its pipeline to Cliffside "throughout the life of this contract." Therefore, since the time that Interior shut the valve in its pipeline to Cliffside, plaintiff has had no choice other than to vent helium being produced by it into the atmosphere.

Plaintiff has exhausted all prospects of mitigating.

Defendant is entitled to certain credits for payments it made for deliveries after the breach, and after suit was filed December 24, 1970.<sup>122</sup> On January 14, 1971, the Government paid plaintiff \$8,671,631.99 covering the period through November 30, 1970. Thereafter, on June 18, 1971, defendant sent plaintiff a check for \$2,285,872.87 which defendant stated was \$232,557.68 less than plaintiff was due for the period December 1, 1970, through March 28, 1971. The difference was explained in the letter accompanying the check, as follows:

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<sup>122</sup> See note 2 *supra*, 197 Ct. Cl. 118 at 131 *et seq.*, 455 F.2d 546 at 554 *et seq.*

The \$232,557.68 represents \$32,557.68 due to the Government under contract 14-09-0060-3085 for the storage of helium March 28-April 30, 1971, and \$200,000 which approximates the sum for which the Government has asserted a counterclaim in *Northern Helix Company v. United States* in the Court of Claims.<sup>[123]</sup>

The \$2,285,872.87 was composed of \$532,431 for the period ~~December~~ December 1, 1970, through 8 a.m., December 25, 1970, and \$1,753,442 for the period from 8 a.m., December 25, 1970, through March 28, 1971. Adding the \$32,557.68 which the defendant withheld for separate storage expenses, defendant has paid \$1,786,000 for helium delivered subsequent to the breach. The \$200,000 which defendant withheld for its counterclaim (which has been severed from this action) has not been included in this amount.

As earlier illustrated,<sup>124</sup> the terms of this contract including the contract price, were negotiated at arm's length. Any edge in experience favored Interior, as the sole producer of helium up to that time. The contract price agreed upon was in line with the Government's prior net cost of production (without profit and other factors affecting a private producer). It was also in line with the prices thereafter negotiated with the other three helium conservation contractors, one of whom contracted to produce a much larger volume of helium. The defendant, however, argues that a recovery based on the contract price would result in an unconscionable profit.

An audit of plaintiff's financial records, and the computations of after tax rate of return on total original

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<sup>123</sup> This is the counterclaim which has been deferred, as noted in the text following note 13 *supra*.

<sup>124</sup> Findings 70 through 103 and corresponding text of the opinion *supra*.



investment, results in a 11.7 percent return at the unescalated contract price, and a 14.2 percent return at the escalated contract price.<sup>125</sup> This is not deemed to be an unconscionable profit.<sup>126</sup> Unconscionability is to be judged under the circumstances prevailing at the time the contract was entered into.<sup>127</sup> At that time plaintiff might well have done better in the commercial market.<sup>128</sup>

*Recapitulation of Damages  
For Breach at Common Law*

Amount of helium which would have been delivered under the contract had it remained in effect during the period December 24, 1970, through August 15, 1983, per stipulation 6,467,000,000 c.f. at contract price of \$12.41 per m.c.f. in effect on December 24, 1970 = \$80,255,000

<sup>125</sup> Findings 273 through 277.

<sup>126</sup> It is in line with the minimum (12 percent) Northern's board would approve at the time of the negotiations (finding 99). Also, it is vulnerable to reduction by the landowners' and producers' claims to helium in the gas they had sold (finding 93). Plaintiff is subject to liability for up to 28 percent of part 2 of the contract unit price. That contingent liability of plaintiff is just that, a potential liability, not a component of the contract price, to be deducted in some indeterminate amount from this claim on defendant's theory that plaintiff's potential liability to others will be erased by payment of its claim. In this connection, see the recent decision of the U.S. District Court (Kansas) in *Northern Natural Gas Co. v. Ralph Grounds*, Civil Action Nos. KC-1969, 1945, 1946, 1947, 1948, 1980, Nov. 12, 1974. That issue, as it affects this case, has been deferred. (See Introduction above.)

<sup>127</sup> UNIFORM COMMERCIAL CODE § 2-302. See also 1 CORBIN, CONTRACTS § 128 n.2 (1963); and *Williams v. Walker-Thomas Furniture Co.*, 350 F.2d 445, 450 (D.C. Cir. 1965).

<sup>128</sup> See & compare *United States v. Bethlehem Steel Corp.*, 315 U.S. 289 (1942).

Contract price, adjusted in accordance with the wholesale price index (Article 7.3(b), using a wholesale price projection with a 1941-71 base period) = \$96,625,000

At a 6 percent discount rate to account for the present value of monies which plaintiff would have received in future years = \$81,677,725

Less sales to Kansas Refined Helium—gross \$2,872,547

Less transportation expense 477,387  
\$2,395,160

Less sales expense 13,032  
\$2,382,128 = - 2,382,128  
\$79,295,597

Plus storage expense charged plaintiff by defendant for 832,000,000 c.f. produced by plaintiff between December 24, 1970, and September 28, 1972, and stored in the Cliffside field under the interim "no prejudice" storage arrangement with Interior = + 502,545  
\$79,798,142

Less payments made for deliveries after suit filed = - 1,786,000  
\$78,012,142

The foregoing considered, it is concluded that plaintiff is entitled to judgment in the amount of seventy-eight million, twelve thousand, one hundred forty-two dollars (\$78,012,142).

## FINDINGS OF FACT

*Introduction*

1. The plaintiff, Northern Helix Company (hereinafter "Helix"), is a wholly owned subsidiary of Northern Natural Gas Company (hereinafter "Northern"). It is incorporated in the State of Delaware and has its principal office at Omaha, Nebraska.

2. This action for breach of contract arises out of an unusually long term agreement, dated August 15, 1961, between plaintiff and defendant, acting through the U. S. Department of Interior ("Interior") under which the latter agreed to purchase, and the plaintiff agreed to produce and supply, an estimated 13.5 billion cubic feet (b.c.f.) of helium gas mixture over a period of 22 years for the purpose of conservation of this depleting national resource.

3. Following what has since been determined to be a breach of the contract by defendant for nonpayment of substantial sums due thereunder, plaintiff declared the contract at an end and filed suit in this court December 24, 1970, to recover damages resulting from the breach. The prayer for relief in plaintiff's second amended petition is \$99,964,000.

4. The case has been characterized by extensive preliminary litigation on an expedited basis due to the sums involved and the wasting nature of this resource. In response to cross motions for summary judgment, the court, on January 21, 1972, decided "the issues of materiality of the defendant's breach and of claimed waiver by the plaintiff of that default. Only those threshold issues of liability are disposed of today; the critical questions of the validity of the subsequent termination of the contract by the Government and of the recovery of damages by the plaintiff are not before us in any way." *Northern Helix Co. v. United States*, 197 Ct. Cl. 118, 120, 455 F.2d 546, 548 (1972).

It determined: "We have, in short, not the slightest doubt that the prolonged failure to pay large amounts was a material breach of the contract." 197 Ct. Cl. at 125, 455 F.2d at 550. On the issue of claimed waiver, noting "the harshness of a contrary result on our special facts, where cessation of production was commercially impossible and avoidance of waste most desirable," and where "continuation of performance reasonable served to mitigate damages," the court further determined that there "has therefore been no waiver of defendant's breach."

It concluded:

For these reasons, we hold that the Government's breach (through non-payment) was material and total, justifying the contractor in considering the contract at an end, and that Northern Helix has not waived that breach. We stress, however, at the end of this opinion as we did at the outset, that we in no way pass upon plaintiff's claim to damages, full or partial, for this breach. This reservation includes the question, among others, whether the Government's termination of the contract in January 1971 would have been valid under the termination provision if the contract had remained in effect. All those issues relating to damages are not before us and we leave them entirely open, without intimating any opinion or tendency. \* \* \* [197 Ct. Cl. at 134, 455 F.2d at 555-56.]

5. Other preliminary litigation revolves about plaintiff's motions initiated with the filing of this action to permit continuation of deliveries of helium to defendant in mitigation of damages and in aid of conservation, but not in performance of the contract. Defendant owns the only storage facility capable of receiving and holding helium in the quantities and for the length of time contemplated by this conservation program. (*See Emeny v. United States*, 188 Ct. Cl. 1024, 412 F.2d 1319 (1969).) Plaintiff's



extraction facilities at Bushton, Kansas, are connected to the defendant's 425-mile pipeline system which extends to defendant's Cliffside storage reservoir near Amarillo, Texas.

Plaintiff filed a motion March 10, 1971, prior to the filing of an answer, for an order to, *inter alia*, mitigate damages without prejudice to the rights of either party in the pending litigation. It was denied by trial judge's order of March 19, 1971, as beyond the power of the court at that juncture of the proceeding when administrative negotiations were underway which might have the effect of rendering the motion moot. Plaintiff's request for review was denied by the court March 26, 1971, on advice that the Secretary of Interior had agreed to store helium under a storage agreement to be negotiated, without prejudice to the rights and obligations of either party in the pending litigation. The denial was without prejudice to plaintiff's "right to recover any damages to which the court may find it is entitled, and without prejudice to plaintiff's right to renew its motion if warranted."

6. On September 12, 1972, after it had incurred about a half-million dollars in storage charges payable to Interior under an interim storage agreement, plaintiff renewed its motion to mitigate damages and conserve helium for the benefit of the losing party, pointing out that in addition to large storage charges it was incurring hundreds of thousands of dollars of expense monthly in the cost of operating the helium facilities, and in nonrecoverable interest charges. Interior had advised that it would stop accepting helium for storage on September 28, 1972, without an extension of an agreement permitting storage, solely at plaintiff's expense. On September 27, 1972, plaintiff's motion was denied by the court which observed:

Insofar as plaintiff's motion seeks to bring about the mitigation of damages, the court sees no need to compel defendant, against its will, to take that course;

if the defendant voluntarily elects not to mitigate damages, any financial detriment it may ultimately suffer will be of its own choosing. On the other hand, plaintiff's interests, to the extent it prevails with respect to damages and recovers a monetary judgment, will be fully protected by the judgment, and will not be harmed by the failure of the defendant to continue to receive and store helium. \* \* \* Public Law 92-415, 86 Stat. 652, together with the law existing prior to that statute, does not empower this court to enter such a specific mandatory order solely on grounds of conservation, no matter how great those needs may be. [199 Ct. Cl. at 998-99.]

7. Since September 28, 1972, when Interior turned off the valve to its pipeline and storage reservoir, plaintiff has continued its tender of helium produced at its Bushton facility but it has not been accepted, and it has instead been vented into the atmosphere.

8. Still other preliminary litigation relates to defendant's affirmative defense, alluded to in the court's opinion of January 21, 1972, in which defendant alleges that since the contract provided that the Secretary of Interior might terminate it under certain specified circumstances, and since by letter of January 26, 1971, subsequent to the breach, he purported to terminate the contract effective March 28, 1971, plaintiff is not entitled to payment for helium produced following that date. The pertinent contract provision reads:

12.1 The United States may terminate this contract at any time if any of the following circumstances or any other circumstance of similar nature should occur which, in the opinion of the Secretary of the Interior, would make the continued operation of Seller's plant and the continued purchase of helium-gas mixture extracted therein unnecessary to accom-

plish the purposes of the Act or any amendments thereto: (1) the discovery of large new natural helium resources, or (2) a substantial diminution in helium requirements. Upon such termination, the provisions of paragraphs 9.4, 12.3 and 13.1 shall apply.

9. A number of the issues in the case grow out of this affirmative defense urged by the Government. As a result, the remaining preliminary litigation has consisted of comprehensive and often controversial deposition and discovery proceedings. In the course of these proceedings, formal claims of executive privilege were interposed by the Executive Office of the President, the Director, Office Manpower and Budget, and the Secretary of Interior, culminating in orders prescribing *in camera* examination of material sought to be produced for appropriate segregation in accordance with said orders.

10. In the course of pretrial, the parties have agreed to defer for future proceedings defendant's counterclaim for the value of some helium delivered by plaintiff which was processed from natural gas extracted from federally owned lands under leases issued by the Government. Also deferred is the determination of the amount of recovery by plaintiff under contract provision 12.1 above, should the court hold that the purported termination after breach was effective under that provision. Similarly, by stipulation following trial, the parties agreed to defer the issue of reimbursement to plaintiff for any contingent third party claims which have been the subject of other litigation.

11. In somewhat related litigation, three other helium contractors, engaged in the conservation program under similar but not identical contracts, procured an injunction March 27, 1971 (*National Helium Corp. v. Morton*, 326 F.Supp. 151), against termination of the contracts on the grounds that Interior had not filed the necessary environmental impact statement required by the National Envi-

ronmental Policy Act (NEPA). The injunction was sustained by the 10th Circuit on appeal (455 F.2d 650 (1971)). Interior thereafter filed an environmental impact statement on November 13, 1972, which was not directed to plaintiff's contract. A decision of June 11, 1973, by the U. S. District Court for the District of Kansas, finding the environmental impact statement inadequate, was reversed by the 10th Circuit October 19, 1973 (486 F.2d 995), and the district court was ordered to dissolve the injunction.

A successor Secretary of Interior on February 2, 1973, sent a termination notice to the other three contractors, effective 60 days thereafter. This second termination notice did not purport to terminate plaintiff's contract.

12. Following conclusion of trial and filing of all briefs herein October 29, 1973, the following issues, broadly stated, remain for disposition:

As to the Government's alleged affirmative defense—

(a) The validity of termination, under the contract, after the contract no longer remained in effect.

(b) The validity of termination, under the contract, absent the filing of an environmental impact statement under the NEPA.

(c) Whether the decision to terminate, under the contract, represented "the opinion of the Secretary of the Interior" as provided in the contract.

(d) Determination of the "purposes of the Act" (Helium Act of 1960), upon which the Secretary's determination was to be premised.

(e) Whether there was "the discovery of large new natural helium resources" rendering conservation unnecessary.



(f) Whether there was "a substantial diminution in helium requirements" rendering conservation unnecessary.

(g) Whether there was "any other circumstance of similar nature" rendering conservation unnecessary. As to plaintiff's petition for damages for breach of contract—

(h) What is the proper measure of damages at common law?

(i) Are damages at common law to be diminished by the possibility that circumstances warranting exercise of the termination provision might have occurred at some time in the future but prior to the contract expiration date?

(j) The facts underlying integration of the helium extraction facilities with liquefied petroleum gas and petrochemical operations, and their effect upon plaintiff's ability to mitigate damages in the amount represented by costs of performance, by cessation of operations.

(k) Any other opportunities of the plaintiff to mitigate.

(l) The portion of the contract price allocable to profit and, as raised by defendant, the issue of whether the profit factor in the contract price is unconscionable.

13. Proper resolution of the foregoing issues requires comprehensive findings of fact on the preliminary plans of the parties, the legislative background of the helium conservation program, the contract negotiations and the contract, the nature of and degree of integration of the industrial facilities, the administration of the helium conservation program, the nature of known helium resources, the uses of and needs for helium past, present and pro-

jected, circumstances surrounding purported termination of the program, and efforts to mitigate damages.

### *Preliminary Plans of the Parties*

14. In 1956 Northern began an investigation in diversification of its natural gas transmission business through expanded use of the ingredients in its natural gas streams.

A March 15, 1957, study prepared for Northern by Universal Oil Products, an engineering consulting firm, concluded that Northern should consider recovery of liquefied petroleum gas ("LPG") products, *e.g.*, ethane, propane, butane and pentane, at some point on its gas collection and transmission system. Helium extraction, in connection with nitrogen extraction for the purpose of increasing hydrocarbon recovery, was mentioned as of possible interest because it would improve the economics of the process.

15. Both helium and nitrogen have low liquefaction temperatures, and can be extracted from natural gas only by a cryogenic process which cools the gas down to the point where substantially all its ingredients are liquefied except the helium and nitrogen which remain as a vapor. The same equipment can be employed for helium recovery and separation of nitrogen so that economies can be realized by combining nitrogen rejection with helium and LPG recovery in the same industrial complex.

16. Two major factors contributed to Northern's move into the LPG and petrochemical industry. Firstly, at Bush-ton, Kansas ("Bushton"), all of Northern's pipelines which collect gas from a multiplicity of wells intersect at one gathering point, and Northern's main distribution system begins there. All the raw materials for an LPG complex exist at that point. Secondly, the gas streams col-

lected at Bushton contain a relatively high percentage of inerts (noncombustible elements).

17. Natural gas is comprised of various ingredients, some of which are combustibles, *i.e.*, hydrocarbons which provide a heating value measured in British thermal units ("B.t.u.'s"). Others are noncombustibles, inert gases, which have no heating value. When noncombustibles in a gas stream are extracted, the total heating value of a given volume of the natural gas increases proportionately permitting extraction of combustibles without reducing the B.t.u. level below that in the original gas stream. As long as the B.t.u. level is maintained at about 1000 B.t.u.'s per cubic foot, the natural gas may readily be sold on the fuel market.

18. Extracted products may then be refined and marketed separately. Because Northern's streams from the Hugoton gas fields of Kansas and Oklahoma have a relatively high inert composition (12 to 14 percent), a significant quantity of propane, ethane, butane and other hydrocarbons can be removed at Bushton if the inert gases, helium and nitrogen, are also extracted, and the level of the residue gas is maintained at about 1000 B.t.u.'s per cubic foot.

19. Northern was prepared to invest from \$200 to \$300 million in such a diversification project and it retained acknowledged experts in the field to plan and direct these activities.

20. In mid-1957, Interior set up a Helium Policy Working Group to determine how a national policy for the conservation of helium might best be implemented, and to estimate the cost of such a program. The group was headed by O. Hatfield Chilson, then the Under Secretary of Interior, and it included representatives of the Departments of Defense, Commerce and Interior, the Atomic Energy Commission, the Bureau of the Budget and the

Office of Defense Mobilization. In October of that year, the group's subcommittee, responsible for determining the best way of constructing and operating new Government helium extraction plants, recommended that the Government finance and build 13 new facilities, but that it also seriously consider inviting industry participation in the program. The first of the proposed Government facilities was to be at Keyes, Oklahoma.

21. On January 24, 1958, the group delivered its final report entitled "The Cost and Implementation of a National Helium Conservation Policy Designed to Prevent the Loss into the Atmosphere of Any Appreciable Quantity of Helium Which Has Not First Served a Useful Purpose." This became known thereafter as the "Chilson Report." It recommended the conservation of 32 billion cubic feet ("b.c.f.") of helium in underground storage by the year 1975, an amount which, it was anticipated, would meet peacetime helium requirements through the year 2000. The anticipated demand was estimated on the basis of both Federal agency and non-Federal uses of helium, that is, national needs.

22. The Chilson Report moved in the direction of greater participation in the conservation program by private industry, in view of increased interest from eligible industry representatives. The report recommended that the Government purchase all of the helium produced at plants which would be constructed by private participants in the conservation program. Proposed plants were to be constructed in the natural gas fields of Texas, Oklahoma and Kansas, said to be the richest known source of helium in the world. Three of these plants were to be on Northern's pipeline system. Should private industry not be interested, the above-described Government plants were recommended.

23. As to the necessity for conserving helium, the Chilson Report stated in relevant part, as follows:



### The Value of Helium

The Working Group was unable to find a basis for defining the dollar savings that would accrue to the Nation from a helium conservation program. It is obvious that in some areas such as naval airships, aerology, and a few other applications, the use of substitutes for helium risks the loss of human life. It is also obvious that the use of substitutes in other areas such as guided missiles, certain welding operations, aeronautical research, and elsewhere would result in loss in efficiency of U.S. weapons and industrial products. The Atomic Energy Commission reports that it has no current knowledge of satisfactory substitutes for helium in its large scale uses, and that if it were premised that helium would no longer be available in quantity, the Atomic Energy Commission would have to begin extensive research projects to develop alternate materials or processes which might take years and could be very costly.

In view of these circumstances, the Working Group is convinced that present and foreseeable uses of helium are highly essential to the welfare of the United States—particularly with respect to its military strength—and a conservation program of the magnitude discussed herein would be justified. Failure to extract the recoverable helium that would be wasted to the atmosphere in fuel gas in the absence of a conservation program over the next 15-20 years would be gross wastage of a very limited and unique natural resource, which could have the effect of reducing or slowing down the rapid advance of scientific, technical, and military developments in this Country.

24. The report gave consideration as of that time to the various sectors of the Nation's helium usage, as follows:

### Present and Estimated Future Helium Requirements (Millions of cubic feet—Fiscal years)

	Actual	Estimated		
	1957	1958	1959	1960
Department of Defense	136.8	215.2	245.9	246.4
Airships		21.9	17.4	17.0
Guided missiles		85.5	96.1	92.6
Welding		6.8	7.0	6.0
Aerology		46.6	52.6	54.4
Nuclear reactors		0.1	0.1	0.1
Breathing atmospheres		0.5	0.5	0.5
Aeronautical research (incl. NACA)		36.8	49.2	50.2
General Stores		17.0	23.0	25.6
*Atomic Energy Commission	51.8	75.5	90.1	94.0
Weather Bureau	7.9	11.0	12.0	13.0
Other Federal	2.0	2.0	2.0	2.0
Total Federal Agencies	198.5	303.7	350.0	355.4
Non-Federal Users	83.0	100.0	120.0	140.0
Total	281.5	403.7	470.0	495.4

### \* End Use Breakdown in AEC

	1958	1959	1960
Military application	17.1	19.3	19.8
Production	48.5	60.0	62.2
Reactor development	9.9	10.8	12.0

*Private Helium Utilization, December 1955*

	Percent of Total Private Helium Used This Purpose	Percent of Helium Used Each Purpose	
		On Govt. Contracts	Other
Welding	64.5	52.3	47.7
Leak detection	8.5	31.7	68.3
Titanium production & fabrication	7.5	83.9	16.1
Research	5.1	63.2	36.8
Controlled atmospheres	5.0	22.5	77.5
Medical	2.6	0.0	100.0
Transistors	2.3	67.1	32.9
Zirconium production	1.6	100.0	0.0
Aircraft components	1.5	99.0	1.0
Advertising and toy balloons	0.6	0.0	100.0
Lighter-than-air crafts	0.6	0.0	100.0
Miscellaneous	0.2	27.1	72.9
Total	100.0	51.8	48.2

25. The program contemplated was to be self-liquidating. The report called for the program to pay for itself out of helium sales while at the same time providing the Nation with conservation of 32 b.c.f. in underground storage for future needs.

26. On April 15, 1958, Northern's executives held preliminary discussions with representatives of Interior's Bureau of Mines (the "Bureau") at Amarillo, Texas, concerning Northern's plans to build an integrated facility for nitrogen rejection, helium extraction and LPG recovery. As a result of this, Northern decided to follow up with more specific proposals. On May 12, 1958, its executives met with Henry P. Wheeler, Jr., the Bureau's Assistant Director for Helium, and with two other representatives

of Interior to discuss a helium extraction contract, in anticipation of the enactment of enabling legislation. Northern proposed a plan whereby the company would build and operate a petrochemical plant and extract helium and nitrogen, processing thereby about a billion cubic feet of natural gas a day. The company would be compensated based upon the costs and reasonable profit on investment attributable to helium extraction. Mr. Wheeler, representing the Bureau, considered the plan to have several advantages. It provided maximum helium recovery from Northern's natural gas; it resulted in a reasonable cost to the Government because the company's investment and operating costs could be spread over several other end-products rather than helium alone; it did not require the Government to guarantee a supply of helium-bearing gas; and it would fit into the overall operations of Northern. Furthermore, as Mr. Wheeler noted for the Government in an internal memorandum of the conference, "[i]t would avoid the necessity for the Government to undertake nitrogen removal and possibly petrochemical operations as a necessary, but basically unrelated, adjunct to helium conservation."

27. On April 25, 1958, President Eisenhower approved the Chilson Report and the policy of helium conservation. He included recommendations for legislation in this area in his budget messages for fiscal years 1960 and 1961.

28. On August 6, 1958, Northern's officials participated in an informal discussion with the Federal Power Commission concerning the extraction of helium, nitrogen, and propane from its natural gas streams.

29. Interior, on August 19, 1958, publicly announced that it was going to propose new legislation permitting it to conserve helium by means of long-term contracts with private industry for helium extraction from natural gas.

30. In the latter part of 1958, the Bureau published an "open file" of technical literature on the subject of helium



extraction in order to assist those companies contemplating participation in the conservation program. Although they were not required, integrated facilities were suggested by the Bureau in these words:

\* \* \* Those considering a process for helium extraction from natural gas might wish to accomplish other things, such as extraction of ethane for petrochemical processing, propane and butane as LPG, and pentanes and heavier hydrocarbons in a natural gasoline product. Such plans would, of course, call for a more complex system. Some may wish to remove nitrogen in greater quantities than would be done if only a crude helium-nitrogen mixture is removed. \* \* \*

31. Throughout 1958 and into 1959 Northern continued to investigate the possibility of participating in the conservation program by extraction of helium from its gas stream. Interior had been the sole extractor and supplier of helium up to that time. It had been selling helium to other Government agencies for its actual cost of \$15.50 per thousand cubic feet (m.c.f.) and to the public for \$19 per m.c.f. Northern considered the possibility of capturing a major part of the commercial market and the further possibility of selling any surplus to Interior. Extraction of helium at various locations and in a separate helium extraction plant, as well as in plants integrated with other operations, was considered. By 1959, Northern ultimately concluded that it could successfully compete with Interior and decided to go into the helium business.

32. Originally, and beginning on January 13, 1959, Northern's instrumentality for this purpose was the Helex Company, a joint venture consisting of Northern and Air Products and Chemicals, Inc. Northern owned 60 percent of the Helex Company stock, and Air Products owned the balance. Helex Company was to build an extraction plant on Northern's line near Sunray, Texas. Air Products was experienced in the extraction of compressed gases, and in

the distribution of helium, this marketing experience being important to Northern.

33. By letter of January 6, 1959, Northern formally advised then Secretary of Interior, Fred A. Seaton, of its interest in participating in the Government's helium conservation program. The Secretary responded by letter of January 28, 1959, stating *inter alia*, that Interior was interested in Northern's plans but would have to delay discussion of details pending passage of basic helium conservation legislation. Secretary Seaton also stated that Interior planned to resubmit to Congress its proposal for legislation based upon the aforementioned Chilson Report. Meetings and correspondence between Interior and Northern continued throughout 1959 and 1960. In the course of these discussions, Northern sought to demonstrate that it could produce helium by improved methods and at lower cost to the Government than the cost, without profit, of production in Government-owned and operated plants.

34. On February 18, 1959, Secretary Seaton appeared before the House Committee on Interior and Insular Affairs for his annual discussion with the Committee. During his presentation, the Secretary discussed Interior's proposed helium legislation, stating:

We are in the practical position now where we have these constantly increasing demands, particularly from Government, and a rather considerable increase in commercial demand, that is, in the sense of medicine and certain other uses, where we feel it is absolutely necessary to engage in a program of conservation of this utterly irreplaceable natural resource.

35. In the latter part of 1959, Northern decided to forego the private market opportunities in helium because it concluded that a long-term helium conservation contract with the Government would enable it to integrate its helium, LPG and petrochemical facilities. Once Northern

made this decision it realized it would have but a single buyer, and would no longer need Air Products' marketing experience. Accordingly, Northern bought out Air Products' 40 percent interest and thereafter operated Helex Company as a wholly owned subsidiary. In 1962, the subsidiary's name was changed to Northern Helex Company.

36. In an internal report of September 14, 1959, Northern had recommended incorporating LPG recovery with helium recovery in the event the company should build any helium plants. The report also pointed out that proposed helium conservation legislation excluded profits from helium recovery from Federal Power Commission ("FPC") jurisdiction, and it stated that a method needed to be developed whereby Northern could be assured that profits from LPG recovery would also be outside of FPC jurisdiction over natural gas.

37. By January 1960, the numerous studies initiated by Northern had resulted in an overall plan to more fully utilize the constituents of its natural gas streams by diversifying into the LPG, helium, and petrochemical industries. An internally developed master plan, dated January 18, 1960, outlined an interrelated and interreliant complex for extraction of helium and LPG products at Bushton. Also early in 1960, Northern initiated extensive review of the feasibility of constructing a plant to extract ethane, propane, isobutane, and heavier hydrocarbons from natural gas or, alternatively, a plant to separate only propane and heavier ingredients. Outside engineers were engaged to investigate the alternates, with consideration given to future separation of helium and nitrogen. Problems of transportation of ethane from Bushton to proposed ethylene plant locations were considered. Specific attention was given to the problem of maintaining the B.t.u. value of the natural gas downstream of Bushton by the extraction of the inerts, nitrogen and helium. By mid-June 1960, emphasis had centered upon construction of an LPG plant with-

out ethane extraction for the time being, with consideration given to constructing the LPG plant in such a manner as would permit later addition of ethane facilities and helium facilities. It was recognized that this would increase the investment in the LPG plant.

38. The immediate market for and feasibility of LPG and helium production permitted the initial construction of those facilities. In turn, plans for the petrochemical complex would depend upon the successful operation of the LPG and helium complex at Bushton.

39. During the first half of 1960, Northern formed Northern Gas Products Company ("Gas Products"), a wholly owned subsidiary, to permit diversification into the extraction and marketing of liquid hydrocarbon products. Gas Products was Northern's instrumentality for the extraction and marketing of propane, butanes, natural gasoline, and other hydrocarbons from Northern's natural gas streams.

40. In an internal memorandum dated February 11, 1960, made in preparation for a congressional appearance on the proposed helium legislation, Interior's Mr. Wheeler noted that it was anticipated that private industry would integrate its helium and other operations to permit extraction of ethane and other hydrocarbons, and removal of nitrogen to upgrade the residue gas heating value.

#### *Legislative Background of the Helium Conservation Program*

41. H.R. 10548, which eventually became the Helium Act Amendments of 1960 ("1960 Helium Act"), was introduced before the House Subcommittee on Mines and Mining of the Committee on Interior and Insular Affairs on February 19, 1960, by Representative Walter Rogers (Texas). The bill was substantially similar to Interior's legislative proposal introduced before the subcommittee on the same day.



42. There is no evidence in the record that the Chilson Report, as such, was formally submitted to Congress. However, the record is clear that the report formed the basis for these subsequent helium conservation legislative proposals.

43. The Helium Act of March 3, 1925, 43 Stat. 1110, had been amended by the Act of March 3, 1927, 44 Stat. 1387, and again by the Act of September 1, 1937, 50 Stat. 885. It was finally amended and revised into its present form by this 1960 Helium Act, 74 Stat. 918, codified at 50 U.S.C. § 167. The latest amendment was signed by President Eisenhower on September 13, 1960 (106 CONG. REC. 19,166 (1960)), and it became effective March 1, 1961.

44. The 1959 Bureau predictions that the Nation's total demand for helium (including a small factor for exports), would rise to approximately 2 b.c.f. annually by the year 2000, and level off at that point, had formed the basis of Interior's representations of future demand during the 1960 hearings which preceded the 1960 Helium Act. The following approximate helium requirements were forecast for the years from 1960 to 1973:

*1959 Total Helium Demand Estimate*

Year	Total Demand (Million Cubic Feet)	
	Calendar Year	Fiscal Year
	Basis	Basis
1960	480	430
1961	565	520
1962	650	590
1963	735	675
1964	820	765
1965	910	860
1966	1020	960
1967	1120	1050
1968	1215	1150
1969	1305	1245

*1959 Total Helium Demand Estimate (Cont'd)*

Year	Total Demand (Million Cubic Feet)	
	Calendar Year	Fiscal Year
	Basis	Basis
1970	1390	1335
1971	1470	1420
1972	1545	1500
1973	1620	1600

45. At the April 20, 1960, session of the House Committee on Interior and Insular Affairs, Representative Stewart L. Udall (Arizona), had introduced an amendment to the bill which eventually became section 15 of the 1960 Helium Act (50 U.S.C. § 167m), after approval by the Committee. The amended provision (then numbered section 14 of the bill) read:

It is the sense of the Congress that it is in the national interest to foster and encourage individual enterprise in the development and distribution of supplies of helium, and at the same time to provide, within economic limits, through the administration of this Act, a sustained supply of helium which, together with supplies available or expected to become available otherwise, will be sufficient to provide for essential Government activities.

Representative Udall introduced this amendment on behalf of his constituents in order to broaden Interior's authority to allow private parties to develop and extract non-wasting high-helium content reserves which were not valuable as natural gas sources, and to sell this helium to the Government for conservation. No mention of the purpose of the phrase "essential Government activities" was made at this session, nor was any particular significance attached to it. Prior to this amendment offered by Representative Udall, the phrase "essential Government activities" did not appear in the bill.

46. Representative Udall testified at trial that he employed the phrase only because the Government's defense uses of helium were the most significant at the time the legislation was being considered, and therefore were mentioned. He wanted to assure passage of his amendment encouraging involvement of the private sector by convincing the other members of Congress that his amendment was consistent with defense needs. He did not believe his amendment in any way limited the purpose of the bill to conservation of helium solely for the benefit of certain specified Government agencies, nor did it detract from the basic purpose of providing a broad, long-range conservation program for all national purposes.

The purpose of the amendment, as confirmed by later discussion of the bill on the floor of the House, was to insure that the program for production, storage and distribution of helium did not remain, nor become, a Government monopoly.

47. When, on April 26, 1960, the House Committee reported H.R. 10548 to the full House, its message (H.R. REP. NO. 1552, 86th Cong., 2d Sess.) contained the following statements:

#### PURPOSE

The primary objective of H.R. 10548 is to furnish authority to the Department of the Interior to carry out an effective long-range program for the production, distribution, and storage of helium in order to assure a sustained supply, taking into account supplies from other sources, to meet essential Government needs. . . .

#### NEED

The annual consumption of helium today in the United States is approximately 370 million cubic feet—that is, 80 times the 1937 level. Helium is essential to

our missile and atomic energy programs and is a valuable industrial material. Seventy percent of the helium now being consumed is used directly by the Department of Defense, the Atomic Energy Commission, the National Aeronautics and Space Administration, and other Federal agencies. An additional 20 percent is used in industry on Federal defense and atomic energy contracts. Smaller, but important, quantities are used in hospitals and in research.

The upward trend in helium demand is expected to continue into the future. Many present-day uses, including those in the missile, nuclear energy, and industrial fields, are in early stages of development. Other uses, involving extremely low temperatures in the region of absolute zero, are still in the research laboratory. Temperatures within 20° of absolute zero cannot be attained without helium.

Helium is a limited natural resource found in only a few natural gasfields. The helium-bearing gas in the principal deposits in Texas, Oklahoma, and Kansas is being produced and marketed for fuel in the Midwest without regard to the concomitant waste of helium. The helium goes along with the combustible portion of the gas and passes through the gas burners into the atmosphere without serving any useful purpose.

The volume of helium wasted daily in fuel gases is about 10 times as great as the present daily helium consumption in the United States. If this loss is allowed to continue unabated and if the demands for helium increase in the future as expected, the helium-bearing gas sources in the United States cannot be expected to be adequate for national needs past 1980-85.

The committee's hearings developed information concerning the existence of reserves of helium-bearing



gases other than the gases involved in the conservation program developed by the Department of the Interior. One of the other potential sources of helium of prominence is the Pinta Dome field in Arizona, discussed in a letter from the Interior Department which is included in the printed hearings, pages 128 and 129.

Because of such possibilities as this, the committee does not, in recommending enactment of H.R. 10548, necessarily endorse or recommend the specific dimensions of the conservation program presented by the Department, which assumes the continuance of centralized production by the Government of helium supplies both for use by it and by private industry. The scope and dimensions of the program to be developed under the legislation must be determined and adjusted from time to time through normal processes, including congressional review of Government operations and congressional consideration of appropriation requests.

The authority given to the Secretary of the Interior by H.R. 10548 is therefore not limited to the implementation of this specific program developed in the executive branch. It is necessarily broad and general and may be applied in any part of the country should a more economical or feasible system of helium conservation, including reliance upon other sources of helium, become available.

### COST

An effective helium conservation program will probably require a sizable outlay of Federal funds in its early years. The committee knows of no method other than that which this legislation will provide to assure a continuous supply of helium for the national defense and other essential Government activities, but it expects the Secretary of the Interior, in adminis-

tering the act, to give reasonable opportunity for and encouragement to the growth of a privately owned and operated helium industry and thus to keep the costs of the Government program to the minimum consistent with the objectives of the policy of Congress.

\* \* \* \* \*

The program indicates that administration of the act, as proposed in H.R. 10548, would not in the long run involve a subsidy from the Treasury, although outlays in the form of borrowings from the Treasury would be involved over a period up to 20 years.

\* \* \* \* \*

### COMMITTEE AMENDMENTS

\* \* \* \* \*

A new section 14 containing a policy statement was added. It emphasizes the need to foster individual initiative and avoid Government monopoly in helium production and distribution as the volume of helium produced and consumed increases, and declares that Government operations under the act should, with other sources, be on a scale sufficient to assure a sustained supply of helium for essential Government activities.

### SECTION-BY-SECTION ANALYSIS

\* \* \* \* \*

Section 1(a) \* \* \* limits the use of eminent domain to circumstances in which the Secretary "determines that such acquisition \* \* \* is necessary in the national interest." Under present law condemnation is provided for "only when necessary for the production or conservation of helium to meet the needs of the

Army and Navy or other agencies of the Federal Government."

Section 4(a) directs all Federal agencies to purchase their "major requirements for helium" from the Interior Department.

Section 4(b) authorizes the sale of helium by the Department of the Interior for "Federal, medical, scientific, and commercial uses" as the Secretary may approve. Existing law provides for sale of "helium not needed for Government use \* \* \* for medical, scientific and commercial use" with prohibitions as to sale for certain airships. These prohibitions and others relating to exports which are now adequately covered by other laws are not continued in the present legislation.

Section 14 states the policy of the Congress favoring individual enterprise in the helium industry while relying principally upon administration of the act to assure helium for essential Government activities.

48. On May 2, 1960, Representative Wayne N. Aspinall (Colorado), Chairman, House Committee on Interior and Insular Affairs, introduced H.R. 10548 for floor debate. The bill was passed without amendment that same day. Paraphrasing the House report on the bill in his introductory remarks, Representative Aspinall stated:

\* \* \* [H]elium \* \* \* has peculiar properties that make it vital to national defense and certain industrial needs of this country and the free world. This legislation is designed to assure that essential Government needs will be met over a long period of time. The primary objective of H.R. 10548 is to furnish authority to the Department of the Interior to carry

out an effective long-range program for the production, distribution, and storage of helium. \* \* \*

The committee does not, in recommending enactment of H.R. 10548, necessarily recommend the specific dimensions of the conservation program presented by Department, which assumes the continuance of centralized production by the Government of helium supplies both for use by it and by private industry. The authority given to the Secretary of the Interior by H.R. 10548 is therefore not limited to the implementation of this specific program developed in the executive branch. It is necessarily broad and general and may be applied in any part of the country.

I know of no method other than this legislation to assure a continuous supply of helium for the national defense and other essential Government activities. At the same time there should be encouragement to the growth of a privately operated helium industry and thus keep the costs of the Government program to the minimum.

A new section 14 containing a policy statement was added. It emphasizes the need to foster individual initiative and avoid Government monopoly in helium production and distribution as the volume of helium produced and consumed increases. It declares that Government operations under the act should, with other sources, be on a scale sufficient to assure a sustained supply of helium for essential Government activities.

Mr. Speaker, this is farsighted legislation. Its goal is conservation of a limited natural resource that is increasingly vital to our national security. \* \* \*



49. Representative John P. Saylor (Pennsylvania), a member of the House Committee on Interior and Insular Affairs, also urged passage of the bill, stating:

But, unless this bill is passed, neither one of those agencies [NASA and the Department of Defense] will continue to operate, because they cannot continue to operate without helium. Helium is becoming more and more important to the Department of Defense in its missile program, to the exploration of outer space, and to the maintenance of the free world. Only in our country the United States, in all the countries of the free world, has any supply of helium been discovered.

The purpose of this bill is to see to it that this great natural asset, which is irreplaceable and is now being wasted into the atmosphere, will be preserved and conserved for the use not only of the agencies of Government but for all of the people of the United States. \* \* \*

During floor debate he explained the purpose of section 14 to a colleague, as follows:

Mr. GRAY. I want to first congratulate the gentleman for his forthright statement and read a portion of the testimony of Under Secretary Bennett and then ask the gentleman a question, if I may.

The Under Secretary had this to say before the committee:

"Many companies have already displayed genuine interest in the program, and I most certainly can assure you that the Department will be ready to sit down with them and work out fair and equitable contractual terms as soon as it has the legislative authority this bill will provide."

Is it the understanding of the gentleman that wherever private interests can supply helium the Government will use those facilities and those plants instead of building these 12 plants? Is that the understanding of the gentleman?

Mr. SAYLOR. The understanding of the committee is that we will ask any one of these private industries to build any of these plants. If there is any other place discovered where helium can be produced it will be necessary to come back and ask for authority to construct another plant.

Section 14 was added to the bill so that the Secretary would have the authority which Under Secretary Bennett testified to and which the gentleman has just referred to.

50. Representative J. Floyd Breeding (Kansas), sponsor of an identical bill, also urged passage of the bill, stating:

Helium is vital to the country's most important defense, nuclear, and space programs. In the past 10 years, the consumption of helium in the United States has increased sixfold. Further increases are expected in the future, as new and expanded uses are found for this unique element.

\* \* \* \* \*

Moreover, the Federal Government is a dominant factor in the helium program for many reasons. The Bureau of Mines of the Department of the Interior is presently the only helium producer. The Department of Defense, Atomic Energy Commission, National Aeronautics and Space Administration, and other Federal agencies presently consume directly about 80 percent of the helium produced by the Bureau of Mines. Some of our most vital defense programs are involved.

The conservation program proposed by the Secretary of the Interior takes all of these and many other factors into account. It has been developed carefully over about a 2-year period, with the assistance and cooperation of many informed persons in Government, science, and industry. It calls for private industry to participate through financing, building, and operating helium plants, but it does not overlook the Government's dominant interest and responsibility for assuring the success of the program.

\* \* \*

\* \* \* [I]t is imperative that we take advantage of the opportunity we now have to save this helium to meet the defense and technologic needs of future generations.

51. In urging passage of the bill, Representative Toby Morris (Oklahoma) stated in part:

\* \* \* Mr. Speaker, I most assuredly believe that immediate action should be taken to conserve our apparently very limited supply of helium that is so vital to our national defense, as well as the ever-developing industrial uses, and general welfare. \* \* \*

52. Representative Rogers, the sponsor of the bill, urged passage in these words:

When we weigh this whole measure in all of its component parts, there is not anyone in the world who can be hurt by this. As a matter of fact, everyone can be helped by it, not only the Department of Defense, not only the country as a whole, but, actually, the user of the gas of which helium is a component deposit. I think it is very vital that we pass the bill today, that we get the program on the road, because every day that is wasted, so much helium is wasted. We are

going to need it in much larger quantities in the future than many anticipate at this time.

When asked if a private company would be required to make a contract with Interior before extracting helium from relatively pure, nonfuel gas sources, Representative Rogers replied:

No; so far as I know there is no law to prevent a man from entering into any business he wants to in regard to helium. The fact of the matter is this, that the cost of it is so great, and unless they do have some assurance of a customer, the cost will be prohibitive, and the U.S. Government as such has been the big customer because of its missile and nuclear production. It is therefore necessary that every bit of the helium be saved. But, this bill does this, I will say to the gentleman from Arizona, it provides the avenue where there will be an open door for anyone owning that helium to enter into a contract with the Department of the Interior.

There would be a most serious responsibility on the shoulders of the Secretary of the Interior to see that every bit of the helium is produced and saved.

53. Representative Kenneth J. Gray (Illinois) expressed his view of section 14 in these words:

I want to associate myself with the remarks made by the distinguished gentleman from Arizona [Mr. RHODES]. He knows very well I opposed this bill in committee because I felt that private interests would be foreclosed from extracting and selling helium. However, since section 14 has been added, I can agree that the bill is much more tolerable than before. I am sure he and I will watch very closely to see what is done by the Interior Secretary in connection with private interests in order that the taxpayers will not



have to foot the bill for exploring for and extracting helium, but instead allow private interests to do the job in supplying this important gas from known and future deposits of helium, as well as the extraction from natural gas pipelines. \* \* \*

54. Senate hearings were held on H.R. 10548 by its Committee on Interior and Insular Affairs on June 1 and 15, 1960. The Senate also considered a similar bill, S. 3376, sponsored by Senator Gordon Allott (Colorado). While testifying before the committee, Interior Under Secretary Bennett stated that in order for the conservation program to pay for itself over a 25-year period, Interior would have to be the primary or sole source of helium for the Federal and industry market. There was no specific reference to the last half of section 14 in the Senate hearings, but the following exchange illustrates the broad purposes of the act:

Senator O'MAHONEY. \* \* \*

Now, the growing helium demand its [sic] such that by 1985 it is as great as the 1960 resource of helium. And in 1985, the resources of helium will have been exhausted. Now, have you controlled that factor in your bill?

Mr. BENNETT. We have the licensing factor, Senator, and we have the broad grant of authority here to reserve the Government share of the market, which this demand reflects as about 90 percent of the total, to the Government program. Ninety percent of that is Government use, according to the forecast that we have.

Senator O'MAHONEY. Ninety percent of the triangle showing growing helium demand is Government use?

Mr. BENNETT. Government and Government-related use, such as Government contracts.

Senator O'MAHONEY. But is not the private use expanding?

Mr. BENNETT. In absolutes, yes, Senator, but not percentagewise, according to these forecasts. In other words, 10 percent of a broad base of an inverted triangle here [indicating] is obviously much greater than 10 percent of the small point of the triangle.

Senator O'MAHONEY. Then you have no fear of growing private demand?

Mr. BENNETT. We do. That is one reason why we have the licensing power in the bill, Senator. That is why we want it. We do not think we need it today. But the time may come when helium will be going into unessential uses, nonessential uses, you see, and at that point we believe that there should be a reserved license authority to direct the flow of helium into the essential uses, as distinguished from the nonessential uses.

Senator O'MAHONEY. I am sorry. This question may call for some repetition, but I have not read the bill.

What are the factors of the growing demand?

Mr. BENNETT. I think it might be wise to let Mr. Wheeler go over that ground again with you, Senator.

Mr. WHEELER. Well, as we pointed out, we have to start from where we are today. Most of the helium that is used today, the two largest uses, are the missile program and the atomic energy program. The space program is a growing and very important use of helium.

There are also very important new developments in the field of cryogenics at extremely low temperatures. We think all of these uses will expand in the future and that new uses will be found for helium that we do not even contemplate at the present time.

In estimating the future consumption of helium, we have generally just extrapolated our historical experience.

Senator O'MAHONEY. I see you have a chart here, chart No. 4, which describes these uses.

Mr. WHEELER. Yes, sir.

Senator O'MAHONEY. They may be greatly changed in the future?

Mr. WHEELER. That is correct.

Senator O'MAHONEY. Let me ask another question.

With respect to the nature of the licensing powers written into the bill, will you describe those?

Mr. BENNETT. Well, they are very broad, as drafted, Senator. They are based on, first, a finding by the President that both national security and the general welfare require the exercise of the licensing power. This you will find in section 3 of the committee print on H.R. 10548. Now, this is page 7, Senator.

And one reason the language is broad is the fact that no one can really predict what the future uses of helium may be. And that being true, it is a little difficult to attempt to sit down and write a series of uses for which licenses would be issued and thereby exclude other uses for which licenses would not be issued.

It almost has to be left on a discretionary level, because no one can foresee the future with enough clarity to spell that out, under today's conditions.

55. On June 30, 1960, the Senate Committee reported H.R. 10548 to the full Senate, accompanying it with S. REP. NO. 1814, 86th Cong., 2d Sess. In its report the Senate Committee noted most of the same points as had the House

Committee in its report, and stated the purpose of the bill in the same language. It also included the same language regarding defense needs as being one of the essential Government needs. In its explanation of the bill, the Senate Committee noted the role that private industry would be invited to play in building plants to sell helium to Interior:

The legislation would provide for industry being invited to participate in the program by financing, building and operating plants to separate helium from natural gas, with the helium then being purchased and conserved by the Government through the Department of the Interior. The committee was assured by representatives of the Department of the Interior that the program would be carried out without adversely affecting the flow of natural gas committed to fuel markets. The legislation would provide new legal authority to make such participation by industry possible, which cannot be done under present statutes. The long-term contracts contemplated under this act would make it feasible for private industry to negotiate with banks and other financial institutions for the capital necessary to build separation plants. If, however, private industry should not indicate a willingness and capability to perform as a helium producer in a reasonable time, the Government could undertake the program as a Government operation.

56. The Senate Committee made some minor revisions in the bill, and renumbered section 14 to the enacted section 15. In the sectional analysis, the committee states:

Section 15 declares the sense of the Congress that it is in the national interest to foster individual enterprise in the development of the helium industry while relying principally upon administration of the act to supply helium for essential Government activities.



57. On August 26, 1960, prior to the Senate floor debate on the helium bill, Senator Allott urged the Senate to give its prompt attention to this legislation. As part of the need for expeditious treatment, he noted the necessity of helium to both the Nation's defense program and civilian activities, including "consumers that have no Government contracts for materiel or products."

58. Throughout the congressional consideration of the Helium Act Amendments of 1960, the desire of Kerr-McGee Oil Industries, Inc., to develop and sell helium from the rich "non-wasting" helium reserves of Arizona was manifested. Also, the natural gas pipeline companies, which owned the Hugoton-Panhandle gas from which Interior sought to have the helium extracted, wanted clear recognition of an intention to permit private industry participation in the conservation program.

59. Former Representative Walter Rogers, who had sponsored the original version of H.R. 10548 prior to the amendment offered by Representative Udall adding section 15, testified at trial. He confirmed the legislative intent by the House and Senate reports that illustrated the purpose of the bill was to provide a long-range helium conservation program for both governmental and non-governmental uses. He also confirmed that the amendment adding section 15 was not considered as a limitation on Interior's authority to conserve helium for national needs, but rather as a "floor" to insure that the Government's essential needs would have priority should the future supplies of helium be insufficient to meet national needs.

60. Former Under Secretary of Interior Elmer F. Bennett testified at trial that he viewed the second half of section 15, added by Congress to Interior's proposal, as a reservation of the Federal market (both Government agencies and Government contractors) for the Interior Department rather than private producers, in order to insure the self-liquidating feature of the legislation. Sales

to "essential Government activities," including Government contractors, were not to be made by private producers, in order to insure the self-liquidating feature of the legislation. Sales to "essential Government activities," including Government contractors, were not to be made by private producers. He did not view section 15 as a limitation on the purposes for which helium was to be conserved but rather a limitation on the Federal market to insure that the program would be self-supporting. He saw the purpose of the legislation as a conservation of a wasting asset for future needs, both governmental and nongovernmental.

61. Representatives of Interior testified before Congress in favor of this legislation on a number of occasions. On March 10, 1960, Under Secretary of Interior Bennett testified in favor of Interior's helium proposal before the House subcommittee. In his opening remarks, he stated:

Today, helium is essential to our missile and atomic energy programs, it is vital in many research programs, and it is a valuable industrial element. \* \* \*

\* \* \* \* \*

\* \* \* [W]e believe that we have no alternative to such a program if we wish to assure an adequate supply of helium for national defense as well as for the future scientific and technological growth of our country.

Scientists and engineers, acquainted with the helium problem, are among the strongest supporters of an effective helium conservation program. We have received expressions of concern about the future of helium from some of the country's leading scientists \* \* \* as well as from many leaders in industry who can foresee a continuing need for the physical properties afforded by helium alone of all the elements.

He also noted the then current breakdown of helium consumers:

• • • It clearly indicates the predominant interest of the Federal Government in assuring a continuing adequate supply of helium. The Federal Government presently uses, directly or indirectly, more than 90 percent of the helium produced by the Bureau of Mines. The Department of Defense and the Atomic Energy Commission are the principal helium consumers. A considerable, and growing, quantity of helium is required by the National Aeronautics and Space Administration.

On that occasion he testified that about 4 b.c.f. per year of helium was being wasted into the atmosphere without serving any useful purpose. He urged expedited passage of the legislation, stating that:

• • • [A]n effective helium conservaion program [cannot] be delayed any longer without seriously jeopardizing the future scientific and technological growth of our Nation. • • •

62. Subsequently, in testifying before the Senate Committee on Interior and Insular Affairs, on June 1, 1960, Assistant Director of the Bureau of Mines, Henry P. Wheeler, Jr., told the Senators that the purpose of the legislation would be to provide for conservation for private uses as well as Federal. The following exchange took place:

Senator ALLOTT. • • •

There is another expansion in this present law, which is that the 1937 act only permits them [Interior] to act with respect to defense needs for the Army, Navy, and the other Federal Government agencies.

Mr. WHEELER. That is correct.

Senator ANDERSON. But there are a lot of others that could take helium if disposed to do so.

Senator ALLOTT. I was trying to point out the 1937 act limits them to the Army and the Navy, the Army and other agencies of the Federal Government. These others are agencies of the Federal Government, but it keeps them from producing, for example, in the area of medical need. That is enlarging all the time. Basic research, some of which would be Government and some of which would not, where they need helium in private industry, but cannot do it under the 1937 act but could do it under the proposed bill; is this right?

Mr. WHEELER. Yes, sir; it certainly broadens the scope of the program immediately, from meeting current demands primarily to one of long-range conservation objectives.

63. Interior had been authorized subsequent to 1936 to produce and sell helium for Government and non-Government uses, and to conserve only its excess production in the earlier-mentioned Cliffside field near Amarillo, Texas. With these amendments it wanted broadened authority to purchase helium for long-term conservation. Interior estimated, in hearings before the House subcommittee, that by about 1985 or shortly thereafter, annual demand would start exceeding the quantity of helium that would be available from all known sources. Without conservation, there was expected to remain in 1985 only about 35 b.c.f. of the known helium resources, but with conservation there would be, in addition to this 35 b.c.f., 52 b.c.f. conserved in the Cliffside field, for a total of 87 b.c.f.

64. Interior witnesses advised Congress that the time of helium shortage could not be accurately predicted, and that many future helium uses could not be foreseen. Under



Secretary Bennett told the House subcommittee, on March 10, 1960:

It would be foolish for anyone to believe that our helium resources will decline and the demand for helium will increase at exactly the rates predicted in the foregoing charts. It is an inescapable fact, however, that our resources are being depleted at a rapid rate and that our need for helium is increasing year by year.

Perhaps the known resources will be capable of meeting our needs to 1995 or the year 2000, instead of 1985 as predicted in our estimates. At some time in the future, we will surely need the helium that is being wasted today.

65. On June 1, 1960, testifying before the Senate Committee on Interior and Insular Affairs, Mr. Wheeler pointed out that Interior had "not tried to predict with any degree of accuracy the details of what helium will be used for in the future." He testified that it was Interior's belief that helium uses would expand in the future and that "new uses will be found for helium that [Interior did] not even contemplate" then. Under Secretary Bennett explained to the Committee the same day that the licensing provision, included in the bill to prevent helium from going to nonessential uses when supplies became depleted, was necessarily written broadly because nobody could predict what future helium uses might be.

66. Interior witnesses further testified before Congress that the Government would have to sponsor the long-term conservation program because it was economically disadvantageous for private industry to do so on its own.

67. Pertinent provisions of the act itself, as enacted, which deal with its purposes are as follows:

Section 3 of the act (50 U.S.C. § 167a.):

#### Authority of Secretary.

##### (a) Conserving, producing, buying and selling helium.

For the purpose of conserving, producing, buying, and selling helium, the Secretary is authorized—

\* \* \*

(2) to make just and reasonable contracts and agreements for the acquisition, processing, transportation, or conservation of helium, helium-bearing natural gas, or helium-gas mixtures upon such terms and conditions, and for such periods, not exceeding twenty-five years, as may be necessary to accomplish the purposes of the chapter \* \* \* or if the Secretary—

(A) determines that the national interests require the conservation of certain helium or require certain helium-bearing natural gas or certain helium-gas mixture for the production or conservation of helium, and

(B) determines that he is unable to acquire such helium, helium-bearing natural gas, or helium-gas mixture upon reasonable terms and at the fair market value,

he is authorized to acquire by eminent domain such helium and so much of such helium-bearing natural gas or helium-gas mixture as is necessarily consumed in the extraction of such helium \* \* \*.

Section 4 of the act (50 U.S.C. § 167b.):

Production of helium; maintenance and operation facilities; research.

The Secretary is authorized to maintain and operate helium production and purification plants together with facilities and accessories thereto; to acquire, store, transport, sell, and conserve helium, helium-bearing natural gas, and helium-gas mixtures \* \* \*.

## Section 5 of the act (50 U.S.C. § 167c.):

## Licensing.

## (a) Rules and regulations.

Whenever the President determines that the defense, security, and general welfare of the United States requires such action, the Secretary shall issue such regulations as he deems necessary for the licensing of sales and transportation of helium in interstate commerce after extraction from helium-bearing natural gas or helium-gas mixtures. \* \* \*

## (c) Purpose.

In issuing licenses under this section, the Secretary shall impose such regulations and terms of licenses as will permit him effectively to promote the common defense and security as well as the general welfare of the United States. The licensing authority herein granted shall be used solely for the purpose of preventing the transportation or sale of helium for end uses determined by the Secretary to be non-essential or wasteful, and any determination that any end use is nonessential or wasteful shall be published in the form of general regulations applicable to all transportation or sales of helium.

## Section 6 of the act (50 U.S.C. § 167d.):

## Sale of helium.

## (a) Purchase by Government Agencies.

The Department of Defense, the Atomic Energy Commission, and other agencies of the Federal Government, to the extent that supplies are readily available, shall purchase all major requirements of helium from the Secretary.

## (b) Sales by the Secretary.

The Secretary is authorized to sell helium for Federal, medical, scientific, and commercial uses in such quantities and under such terms and conditions as he determines.

\* \* \* \* \*

(e) Prices of sales for medical purposes; sales to non-Federal purchasers.

Helium shall be sold for medical purposes at prices which will permit its general use therefor; and all sales of helium to non-Federal purchasers shall be upon condition that the Federal Government shall have a right to repurchase helium so sold that has not been lost or dissipated, when needed for Government use, under terms and at prices established by regulations.

## Section 15 of the act (50 U.S.C. § 167m.):

## Individual enterprise in developing helium.

It is the sense of the Congress that it is in the national interest to foster and encourage individual enterprise in the development and distribution of supplies of helium, and at the same time provide; within economic limits, through the administration of this chapter, a sustained supply of helium which, together with supplies available or expected to become available otherwise, will be sufficient to provide for essential Government activities.

68. This last section entitled "Individual enterprise in developing helium," being the amendment proposed by Representative Udall, is the only place in the act where the phrase "essential Government activities" appears.

69. It is concluded that the overall purposes of the Helium Act Amendments of 1960 were to establish an effective long-range helium program for the conservation of this important natural resource to meet national needs



in the long-range future when reserves would be inadequate to meet demand. Within this overall objective, the Helium Act Amendments of 1960 were intended to cover a number of more specific objectives. One of the specific purposes of the act was to assure a sustained supply of helium for essential Government needs, as a minimum, and those needs had a priority. There is no evidence that the phrase "essential Government activities" was intended to limit the purposes of the act to supplying the needs of the specific Government agencies then using helium, to the exclusion of other Government agencies which would in the future be concerned with helium. Nor is there evidence of an intent to distinguish Government (that is, agency) needs from national needs, nor to differentiate between the Government and the needs of industries on which the Government and the Nation depend, except to insure that essential Government needs were met at the minimum.

It was also a purpose of the act to supply helium for medical, scientific, and commercial uses not then readily foreseeable. Another purpose of the act was to prevent the continued waste of this valuable natural resource in fuel gas being produced in the Hugoton-Panhandle fields, which contained about 90 percent of the Nation's helium reserves. Still another important purpose of the act was to establish a helium conservation program that would pay for itself and still provide for the storage of 40-50 b.c.f. of helium by 1985 for national needs. Finally, a purpose of the act was to encourage and expressly provide for participation by individual enterprise in the development and conservation of this country's helium resources.

#### *The Contract Negotiations and the Contract*

70. On September 14, 1960, Secretary of the Interior Fred A. Seaton outlined in a news release his department's plans for implementing the long-range helium con-

servation program authorized by the legislation signed the previous day by President Eisenhower. The program was said to be designed to save for future use about 52 b.c.f. of irreplaceable helium, described as necessary to the Nation's defense and industrial development. In inviting bids from private industry, the Secretary stated that because costs were expected to vary from location to location, the reasonableness of the cost of the helium purchased would, as a general rule, be gauged by the estimated cost to the Government as if it were to do the job itself, plus allowances for interest on investment, taxes, insurance and profit. Interior sought minimum investment plants employing no standby equipment, excess capacity, or other unnecessary embellishments.

71. From 1937 until the passage of the helium legislation in 1960, Interior had been the sole producer and supplier of helium for all Government and non-Government requirements.

72. In February 1960, Northern had consulted Fluor Corporation, an engineering construction firm. Fluor was to determine the most practical way for Northern to recover LPG and/or ethane at Bushton while allowing for extraction of helium and rejection of nitrogen. In its report dated July 8, 1960, Fluor suggested construction of an LPG plant designed so that ethane and helium recovery with nitrogen removal could be added. Special provision was made in the design of the suggested LPG facility, segregating the feed gas so that only helium-rich natural gas would feed the helium plant, thereby minimizing the size of the helium plant required.

73. In late summer 1960, Northern's wholly owned subsidiary, Gas Products, contracted with Fluor for the construction of such an LPG plant at Bushton. For an additional \$60,000 the contract provided for the installation of facilities permitting future recovery of ethane at the plant.

74. On September 15, 1960, Fluor supplemented its July 8th report with the results of its study on a helium recovery plant to be constructed adjacent to the LPG plant, then under construction. The helium plant was designed to process the helium-rich stream exiting from the LPG plant, and to reject 12 million standard cubic feet per day of inerts (helium and nitrogen) through extraction of helium and segregation of a low-B.t.u. fuel stream, composed mainly of methane and nitrogen, was to supply the helium plant's fuel needs, and part of the LPG plant's fuel needs as well. In addition, it was designed to tie the steam systems of the plants together, and to use certain utilities available from the LPG plant, including electric power, propane refrigerant, treated water, the cooling tower, make-up water and instrument air for the helium plant.

75. In a February 10, 1961, internal memorandum to the Under Secretary of Interior, the Bureau's Director noted that a factor to be considered when deciding whether to build Government plants or private plants was that some of the private participants "would integrate helium extraction with nitrogen removal, ethane extraction, and other operations not independently feasible," thus aiding the national economy and better utilizing the ingredients in the natural gas.

76. Formal contract negotiations between Northern and Interior began on February 23, 1961, and they were concluded the following June, following which a contract was executed between the Government and Northern acting through its wholly owned subsidiary, Helex.

77. The negotiating team for Interior on the Helex contract was highly competent and it had gained extensive experience in the helium area. Established on January 10, 1961, it was headed by the earlier-mentioned Henry P. Wheeler, Jr., still the Assistant Director of the Bureau of Mines for Helium. It also included the Bureau's Chief of the Branch of Property Management, the Chief Petroleum

Engineer, the General Manager for Helium Operations, and the Chief of the Division of Helium Resources. Interior, at that time, had had 40 years of exclusive experience in building and operating helium plants. In preparation for the negotiations, bureau engineers developed information about the availability of helium-bearing natural gas in various fields and pipelines, selected possible extraction plant locations, and estimated the comparable costs of constructing and operating Government plants at those locations. An outside consultant was used to develop a method of relating plant costs to plant size and other variables, thus permitting Interior to evaluate cost features of proposals from private corporations seeking to participate in the conservation program. The negotiators also had legal assistance furnished by Interior's Office of the Solicitor. It was this team which negotiated with the four companies selected out of 14 which had submitted proposals. Those selected were Northern, Cities Service Helium, Inc., Helium Conservation Corp., and Panhandle Eastern Pipe Line Co.

78. Interior decided to negotiate the contracts rather than to award them following competitive bidding in order to conserve as much helium as possible. By using negotiation procedures, Interior could select specific helium-bearing natural gas sources that were being rapidly depleted to supply fuel markets; it could consider how quickly the interested companies would move to plant completion; and it could take into account the various technical factors affecting costs, which varied from one location to another.

79. On February 23, 1961, a meeting was held between Interior's representatives and Northern's representatives to discuss the latter's participation in the conservation program. Mr. F. C. Nicholson, vice president and chief negotiator for Northern, advised Interior that his company was then in the process of building an LPG plant at Bush-



ton and therefore would be able to offer a multipurpose plant which would extract helium, liquids and nitrogen, thus permitting a price advantage to Interior. On March 30-31, another meeting was held with the Government's representatives, again headed by Mr. Wheeler. Northern then advised the Government that the Bushton plant then being constructed was a liquids recovery plant, that the helium extraction plant would be fully integrated with it, and that petrochemical facilities might be constructed and added in the future. Draft contracts were exchanged by both sides. On May 16, 1961, Mr. Wheeler sent a memo to the members of Interior's negotiating board discussing a draft of the contract. In that memo he recognized that the helium extraction facilities would, in most cases, be fully integrated with other facilities of the contractor.

80. In the negotiations with Northern, Interior was not concerned with what it would cost the private contractor to build and operate his plant. The Government's prime concern was what it would cost the Government to build and operate its own grass-roots plant (one independent of all other operations) at the contractor's site. Once the plant size and nature of the gas supply were determined, Interior's engineers estimated what the Government's plant investment and operating costs would be. It was estimated by Interior that the plant investment would be \$22-23 million at plaintiff's site. From these figures, unit costs for extraction were calculated, to which were added other typical industry costs such as interest, taxes and insurance. An allowance was added for profit at the rate of 6½ percent on the unamortized total investment over a 20-year period, although an actual return of up to 13 percent on equity funding was contemplated by Interior's negotiators. A processing fee of \$2 per m.c.f. of recoverable helium was also added. This was to cover the value of the helium in the natural gas at the same price the Government was paying for helium-bearing gas at its Keyes facility.

81. Interior, before it initiated negotiations with Northern, anticipated that the Government would have to pay \$15 per m.c.f. of contained helium to extract it in Government-owned plants. In the event contracts could not be successfully negotiated for the purchase of helium from private industry at a price within this range, Interior was prepared to institute proceedings to condemn the helium, and to construct, and operate extraction facilities itself.

82. Prior to initiation of negotiations, Interior estimated the cost of obtaining helium from Northern at \$11.08 per m.c.f. of contained helium. Northern was prepared to start at \$12.50 per m.c.f., and to go no lower than \$8.50 per m.c.f. The final price agreed upon was \$11.24 per m.c.f., which both negotiating teams considered fair and reasonable.

83. The initial contract price was divided into two parts. Part 1 of the initial price was established at \$0.47 per m.c.f., and represented the portion of joint costs allocable to exploration, production, gathering, extraction, processing, compression, transportation, and storage allocable on volumetric basis to the contained helium. Part 2 of the initial price was \$10.77, which was the balance of the total initial price. The contract provided for periodic adjustments of Part 2 of the initial price according to a prescribed inflation or deflation formula. It was based on increases or decreases in the wholesale price index for all commodities, exclusive of farm products and food. In addition, if Helex was required to pay to unrelated third parties amounts in satisfaction or settlement of claims by such parties to the helium contained in the Hugoton area natural gas, the contract provided that Interior would reimburse Helex to the extent that such payments exceeded 28 percent of the average of Part 2 of the price in effect during the time covered by such claims.

84. The helium-gas mixture Helex was to deliver to Interior was to be about 60 percent helium, and it there-

fore required purification by Interior. At costs of purification of \$2 to \$3 per m.c.f., the total cost to the Government of buying and purifying plaintiff's helium, at the initial contract price, was \$13 to \$14 per m.c.f. Prior to November 1961, the Bureau of Mines had been selling purified helium to Federal agencies at its actual costs of \$15.50 per m.c.f. The price to non-Federal users was \$19 per m.c.f. After November 1961, the bureau sold purified helium to all at a price of \$35 per m.c.f., a price which the Chief of the Bureau's Helium Activity considered to be reasonable, and which would support the self-liquidating features of the helium conservation plan. When private producers first entered the market in the early 1960's, they also sold purified helium at about \$35 per m.c.f. By 1966 their competitive price had dropped to about \$25 per m.c.f.

85. There has been set forth in finding 8, *supra*, a specially negotiated provision permitting termination by the Government under certain specified conditions included in the provision.

Interior negotiated this termination provision with the intent of providing an option to terminate the contract only if its continuation was clearly no longer in the public interest, or it did not make any sense to continue conserving helium, *e.g.*, large new resources were discovered, or the need for helium became nonexistent. Mr. Wheeler testified at trial and in a deposition before trial introduced into evidence at trial:

\* \* \* My concern with regard to the termination provision was that the government not be locked into contracts which for any reason would not—for any reason would not be in the public interest.

\* \* \* \* \*

But we had to provide for the possibility that something might happen which would make the contracts clearly no longer in the public interest. \* \* \*

So my concern, whether or not it is expressed in that contract, was a very broad concern that the government not be locked into contracts which would clearly not be in the public interest for some reason.

\* \* \* If \* \* \* something would happen, that it just didn't make sense if there was no demand for it, that we also wouldn't be locked in to saving something for no useful purpose.

86. Marling T. Ankeny, Director of the Bureau, explained this provision in a memorandum to the Associate Solicitor, Interior's Division of Minerals Resources, on September 8, 1961, as follows:

Under paragraph 12.1, it was the intent of the parties to provide for termination under circumstances that would make continuation of the program undesirable in the public interest. The two specific items listed are of that nature. There was no intent to provide for arbitrary termination by the Government.

87. Interior also hoped that plaintiff would develop economical technology for extracting helium from leaner helium sources. It did not contemplate, however, that accomplishment of this contract objective by plaintiff would be a ground for termination. Mr. Wheeler stated in deposition before trial (introduced at trial).

Q. Now, the question I am putting to you, or I did put to you very inarticulately, stated, in negotiating the terms of the termination provision there, particularly Article XII, were you contemplating using as a ground for terminating the contract the fact that the contractors did prove that such technology could extract helium economically from low helium-bearing gas streams?

A. I have to answer your question no. We contemplated that they would do that and we wanted them to



do that, and certainly we didn't contemplate that if they did what we intended for them to do in the contract it would be a cause for terminating the contract.

88. This intent by Interior's negotiator is confirmed by Northern's negotiating representative. In the protracted negotiations relating to this clause, Northern sought a very specific and limited termination right on the part of the Government, for it contemplated a long-term contract and based its plans to integrate the helium plant with the existing LPG facility, and later with petrochemical operations, on that fact.

89. It is clear from the record that at the time of negotiations, both parties expected the contract would run for its entire 22-year term. They considered termination under article XII of the contract to be a "remote possibility."

90. During the negotiations, Interior actually considered continuing the conservation program beyond the end of the first 22-year contract term. Soon after the contract was executed, Interior gave consideration to enlarging the program, subject to appropriation of additional funds by Congress.

91. At the time of the negotiations, it was Mr. Wheeler's understanding that the purposes of the 1960 Helium Act were to conserve helium for essential Government activities and to conserve helium for essential non-Government activities such as medical, scientific, and other uses fostering technological growth of the country as a whole. His objective in negotiating the contracts was to conserve as much helium as possible within the budgetary allocation. Government versus non-Government requirements for the helium to be conserved and stored was not an issue during the negotiation of wording the termination provision.

92. At the time of the negotiations, the parties recognized that the long-term future requirements for helium

could not be defined nor estimated with precision, and that the estimate of need forecast for the year 1985 and thereafter might not in fact occur until after the year 2000. Interior officials proceeded on the assumption that the helium then being wasted would be needed at some point in the future. Historically, there had been temporary periods of decreased helium demand, and any such temporary declines were not intended to support a determination that the contracts were clearly no longer in the public interest under the termination clause. The words "substantial diminution in helium requirements" in that clause were intended to refer to long-range national requirements.

93. The provisions relevant to contingent claims by third parties asserting an interest in the helium plaintiff was to extract from the natural gas streams, are as follows:

7.4 In addition to all other amounts payable hereunder, the United States shall pay to Seller all amounts, except as hereinafter provided, that Seller shall pay, directly or through an affiliated company, to parties other than itself or an affiliated company in satisfaction or settlement of any claim or claims by such parties to helium in the Hugoton area gas, as defined herein, or to any interest in such helium, whether or not the amounts of such payments are related to the helium extracted in Seller's plant. . . . As to each such claim, the amount that the United States shall be required to pay to Seller in accordance with this paragraph shall not include an amount to be calculated applicable to each such claim equal to twenty-eight (28) per cent of the weighted average of part 2 of the unit price or unit prices in effect during the time covered by such claim multiplied by the volume in Mcf of helium in the Hugoton area gas, as defined herein, covered by such claim. [Paragraph 9.4 also provides for separate billing for amounts due plaintiff under paragraph 7.4.]

. . . . .

8.2 Seller warrants title to the helium-gas mixture delivered hereunder and the right to sell the same and that it is free and clear of all liens and adverse claims. Both of the parties hereto agree that such warranty is subject to the obligation of the United States to make certain payments to Seller in accordance with paragraph 7.4. Seller agrees further that, upon request by the United States, Seller shall provide such documentary evidence as it has in its possession covering Seller's rights, titles and interests in and to the helium-gas mixture delivered hereunder.

8.3 In the event of any adverse judicial decisions arising out of any claims to the title of the helium-gas mixture or any constituents thereof, the United States may, without otherwise affecting this contract, retain up to twenty-eight (28) per cent of part 2 of the unit price of such part of the helium-gas mixture affected by such adverse decision, without interest, until such claims are finally resolved or until satisfactory indemnity or bond has been furnished by Seller to the United States.

94. On proposed integration of production facilities, paragraph 31.3 of the contract reads:

In connection with Seller's [plaintiff's] plant, Seller at its sole risk, cost and option may construct and operate, or cause to be constructed and operated, facilities for extracting products other than helium from the natural gas processed through said helium plant.

95. In the course of negotiations, the Government not only contemplated that integrated facilities would be used but, as Mr. Wheeler testified, "deliberately made it possible" through paragraph 31.3 of the contract above-quoted.

96. Integration of facilities was considered by Interior's General Manager for Helium Operations to be the principal

area for private helium contractors to find economic incentive to enter into the helium contracts, and it would also permit a lower price to Interior. By integrating their facilities, he suggested to Mr. Wheeler in a reevaluation memorandum written December 22, 1961, the companies could accomplish LPG recovery, or other low temperature extractions.

97. Interior recognized that the purchase of helium from the private sector provided a number of advantages. Private industry was in a position to build multipurpose, integrated plants which would allocate only a portion of the construction and operation costs to the helium produced. The Government, on the other hand, could build only single purpose (grass roots) helium plants which would produce helium costing the same or more than if privately produced, but without producing the additional products which would tend to stimulate the economy. By broadening the base of the helium conservation program, Interior also hoped to stimulate greater technological advances in the extraction process. Furthermore, a high Federal capital investment would be avoided and the states would realize additional taxes from the facilities if the plants were privately owned and operated.

98. On June 20, 1961, the board of directors of Helix authorized the company's officers to enter into a contract with the United States, in substantially the form negotiated by Northern and submitted to that meeting, for the sale of a helium-gas mixture by the company to the United States.

Thereafter, on July 6, 1961, the directors authorized the officers to enter into a contract with the Fluor Corporation for the actual construction of a helium extraction plant near Bushton, Kansas.

99. An internal report, dated August 4, 1961, presented the agreement negotiated with Interior to Northern's



board of directors for ratification. The report stated that a sale price for helium at \$11.24 m.c.f. would yield a 12 percent after tax return on equity investment because projects had to earn that much to be approved by Northern's board. The report also proposed an initial 57/43 percent debt to equity ratio to finance the plant which would increase in proportion of equity as the 20-year scheduled repayment period progressed. The debt was proposed to be in the form of 5 percent bonds, to be redeemed starting after 2 years. It was also estimated that \$500,000 would be needed annually for working capital.

100. On August 3, 1961, Pub. L. No. 87-122, 75 Stat. 246, became effective. It provided appropriations for the Department of the Interior and related agencies, including authorization for the Secretary of the Interior to enter into helium procurement contracts with fiscal payments limited to \$47,500,000. It further permitted borrowing from the Treasury of up to \$10 million for this helium procurement program.

101. Contract No. 14-09-0060-2421, out of which this suit for breach of contract arises, was signed on August 15, 1961, by the Director of the Bureau of Mines, Marling J. Ankeny, and by F. C. Nicholson, vice president of Helex. Secretary of Interior Stewart L. Udall's signature also appears on the contract, indicating his approval. The parties agreed, *inter alia*, that the plaintiff would tender all the helium produced in its plant, and the Government would pay for the volumes tendered, whether taken or not, up to an annual dollar limitation of \$9,500,000. The helium tendered would be a helium-gas mixture composed of approximately 60 percent helium extracted from Hugoton area natural gas which contains about 0.46 percent helium. Deliveries were to begin by January 1, 1963. The term of the contract was to be 22 years. The Government planned to pump the helium-gas mixture via Government pipelines to its Cliffside storage field near Amarillo, Texas.

102. When Secretary Udall signed and approved plaintiff's contract on August 15, 1961, it was his understanding that Interior was contracting to purchase helium for the long-range needs of the Nation as a whole, for governmental needs, and commercial, technological, scientific or any other use then known or thereafter developed.

103. Later that year, Interior entered into similar contracts for the extraction of helium with Cities Service Helex, Inc., National Helium Corporation, and Phillips Petroleum Company, at initial contract prices of \$11.78, \$11.78 and \$10.30 per m.c.f., respectively. The weighted average price Interior initially paid amounted to \$11.29 per m.c.f.

*The Nature and Degree  
of Integration of Plaintiff's Facilities*

104. The industrial complex constructed at Bushton is composed of three plants which process Northern's natural gas gathered at this point. There is an LPG extraction facility owned by Northern's wholly owned subsidiary, Gas Products, built in 1961; the helium extraction facility owned by Northern's wholly owned subsidiary, Helex, built in 1962; and an ethane extraction plant owned by Gas Products built in 1969. Helex's first delivery of helium under the contract was made on December 7, 1962.

105. The helium, LPG and ethane facilities comprising Northern's Bushton complex are totally integrated, both technologically and physically. Natural gas from Northern's pipelines enters the LPG facility where it is processed and cooled, and propane, butane, isobutane, and gasoline are extracted. One of its functions is to precondition the feed stock for subsequent processing in the ethane and helium facilities by removing the heavy constituents, and cooling and dehydrating the gas stream. Gas leaving the LPG plant enters the ethane extraction facility. Ethane extraction further prepares the feed for the helium plant

by reducing the volume to be accommodated, cooling it further, and dehydrating it further. The remaining gas then enters the helium plant where helium is removed, resulting in a low-B.t.u. stream being returned to the ethane facility for use in its boilers, thereby effecting nitrogen removal. The balance is returned to Northern's pipeline for transmission to its fuel customers. Utilities for the three plants are also fully integrated at the complex in the interest of efficiency, reliability and safety. This interdependence and interrelationship was planned with the design of the LPG facility, the first to be constructed at Bushton.

106. Although Gas Products' LPG plant was completed in mid-1961, commencement of operations was delayed until December 28, 1962, awaiting approval of the Federal Power Commission (FPC). Northern experienced some difficulty in obtaining approval to connect its existing gas transmission system up to the new LPG plant. Although the LPG plant does not come under the jurisdiction of the FPC, the transportation of natural gas by Northern to the LPG plant does. Northern's application to the FPC to make the connection was filed on November 1, 1960. Twenty-seven intervenors were involved in the FPC hearing, many of them customers of Northern concerned that the B.t.u. value of the stream delivered to them might be reduced in some degree by the extraction of hydrocarbon liquids at the LPG plant. After an initial decision by the hearing examiner on June 28, 1962, and an appeal on December 28, 1962, the FPC issued its certificate of public convenience allowing Northern to proceed, but requiring it to reduce its rates and increase the volume of the deliveries to its customers in order to balance out the lowered B.t.u. value of the natural gas with greater volume. The decision was unsuccessfully appealed by one intervenor (*Mid-American Pipeline Co. v. FPC*, 330 F.2d 226 (D.C. Cir. 1964)). Until the December 28, 1962, FPC approval, the helium plant operated at a reduced production level using Northern's previously certified transmission system.

107. The LPG plant was built as a "grass roots" facility, that is, it is self-supporting with regard to utilities (water treatment, demineralization of water, electric power, steam, air systems and refrigeration), shops, offices, laboratory and warehouse. At the time it was built it was the largest such extraction plant in the free world.

The plant uses a cold oil absorption process to extract liquid hydrocarbon products. The natural gas streams entering the plant are initially segregated into two basic streams for processing—the Hugoton area gas, rich in helium, nitrogen, and the desired liquids; and a leaner stream, containing a lower percentage of these constituents.

108. The rich and lean streams follow similar, but separate processing steps through the LPG plant. The feed gas is first contacted with glycol, a dehydrating agent. The gas and glycol combination then enters the incoming heat exchanger where it is cooled by refrigeration produced by the residue gas returning to Northern, then refrigerated to  $-25^{\circ}\text{F}$ . and  $-50^{\circ}\text{F}$ . in chiller units which are cooled by a propane refrigeration system. It then passes into a glycol separator which removes the glycol for reuse. At this point part of the stream has condensed to liquid state. The gas and liquids proceed through another  $-50^{\circ}\text{F}$ . chiller and into the bottom of the rich gas absorber. The uncondensed gases rise through refrigerated oil which absorbs products sought to be extracted. The unabsorbed residue gas then passes through a scrubber and returns to Northern, while the rich gas stream is diverted for processing in the ethane and helium plants.

Remaining in the absorbers is the absorber oil along both the extracted liquid products. These fluids from both the rich and lean streams are combined and passed through a deethanizer where ethane, methane and lighter materials are captured. The remaining extracted products, still in the absorption oil, are next removed in a dehexanizer and stored for separation into their component products. The stripper absorber oil is then recycled for reuse.



The stored extracted products are separated by their different boiling points (fractionalization) into propane, butane, isobutane and gasoline. Each product then flows to pipelines for distribution or to underground storage fields.

Technologically it is necessary to remove liquid hydrocarbons from natural gas, as well as water that may be present, in order to process it for helium extraction. The LPG plant performs these functions in a number of major facilities which would otherwise have to be provided by the helium plant. In addition, major utilities are provided to Helex by the LPG plant.

109. The gas exiting from the LPG facility was originally piped directly to the helium plant. After the ethane plant came on stream the gas proceeded from the LPG plant to the ethane plant, and thence to the helium plant. (See finding 105).

110. Very simply stated, the extraction process at plaintiff's helium plant employs three refrigeration stages. At each stage the entering gas is cooled, causing part of it to liquefy. The liquid part is removed, and the gaseous part continues to the following stage. Exiting as a gas from the third and last stage is crude helium.

The natural gas which exits from the ethane plant is helium rich. It is first dehydrated and filtered in the helium plant. As it enters the first refrigeration stage the gas is cooled in heat exchangers to about  $-160^{\circ}\text{F.}$ , and it then passes through a flash column containing a series of seven chambers in which the pressure is progressively decreased, cooling the contents of each chamber.

As the gas cools in the first chamber, part of it liquefies. Actually part of it has already liquefied as it cooled in the heat exchanger, and it enters the first chamber in a part gaseous, part liquid state. The liquid portion is withdrawn and sent to the next chamber where the pressure is sud-

denly decreased further. Just as gas trapped in a carbonated beverage is released when the bottle cap is removed, so is trapped gas released in each successive lower pressure chamber of the flash column. In each case the release results from the sudden drop in pressure. The liquid remaining in each chamber is withdrawn and sent to the next chamber. The liquid remaining in the last chamber of the first flash column is piped back to Northern's pipeline and on to its customers. It contains about 0.01 percent helium and 10 percent nitrogen.

The gas release in each chamber of the first state is also withdrawn and sent on to the second refrigeration stage where it is cooled to about  $-222^{\circ}\text{F.}$  in a heat exchanger from whence it enters another flash column constituting the second stage. This flash column contains three chambers. Again, the liquid from each chamber is sent to the next lower pressure chamber where more trapped gas is separated. The liquid remaining in the last chamber is also piped back to Northern's pipeline. It contains approximately 0.02 percent helium and 28 percent nitrogen.

The gas from the top of each chamber of the second flash column is withdrawn and sent on to the third refrigeration stage. The gas is there cooled to about  $-295^{\circ}\text{F.}$  in another heat exchanger, and passed into the first of four chambers of the last flash column. As with the other flash columns, the liquid in each chamber is sent on to the next chamber in the column. The liquid remaining in the last chamber is withdrawn and used as the low-B.t.u. fuel in the ethane plant. It contains approximately 0.01 percent helium, 73 percent nitrogen and 26 percent methane.

The gas from the first chamber of this flash column is the crude helium which is piped to the Government. It contains approximately 72 percent helium and 27 percent nitrogen. The gas in the second and third chambers is recycled to the first chamber of this flash column in order to extract the maximum amount of helium. The gas in the

fourth chamber of this flash column (in which the pressure drops somewhat from the third stage, but the temperature is higher) is approximately 0.3 percent helium but 98 percent nitrogen. It is withdrawn and used as a purging agent in the helium plant.

111. The helium facility, as originally designed, separated out a stream of gas in the final processing stages which had a high nitrogen content mixed with methane. By segregating a stream of mostly inert gas (low-B.t.u.) Northern planned to compensate for the reduced heating value in the residue gas when ethane extraction facilities were added in the future as planned. The plans initially agreed upon with Fluor, which designed and constructed the plant, included special boilers in the helium plant which would burn the low-B.t.u. fuel. However, the FPC ruled that the nitrogen so used would have to be valued as a fuel and costed on a volume basis. Plaintiff found this to be economically disadvantageous and reinjected the low-B.t.u. stream into the pipeline downstream of the helium facility. Subsequently, when the ethane facility was built, the low-B.t.u. stream was used to fuel the special boilers in that plant.

112. The construction and cryogenic helium extraction techniques used by plaintiff at its Bushton facility represented a substantial advancement in the state of the art. For example, much leaner gases were used as a feed stock for helium extraction, much larger quantities were processed each day than had ever been processed before, advanced heat exchangers were developed, a single train process was used for the first time on such large volumes, and for the first time cryogenic extraction processes were used for such large volumes following an oil absorption process. In sheer size, the entire facility was scaled up 20 times larger than any that had ever been built before.

113. As a consequence of the advanced technology employed at the Bushton helium extraction facility, major

problems were encountered during the period 1962 through 1966 before full operating continuity and operating efficiencies were achieved. Many times from 1963 through 1966 the helium facility froze up and shut down, requiring a week each time to defrost. That problem was brought under control by installation of molecular sieve dehydrators in 1966. Major problems were experienced in the exchangers due to failures in shell and tube equipment where tubes were being cut for unknown reasons, and due to collection of highly corrosive dust. On October 17, 1963, two explosions occurred causing personal injuries and property damage due to propane leakage. Another explosion occurred February 21, 1964, causing less damage. In the 11 months from October 1, 1962, to September 1, 1963, there were 21 plant shutdowns, 11 due to problems in the helium plant. An intensive program was instituted in May 1963 carrying through November 1963 to identify and correct the problems which precluded full operating continuity and efficiency of the unique facility. While operating regularity and design efficiency were eventually achieved and the practicability of the technological advances proved, these were achieved at the risk of plaintiff under its fixed-price contract with Interior.

114. The helium facility represented an \$11,500,000 capital investment. Fluor estimated, in March 1963, that it would have cost \$4,596,500 more in initial capital costs to build the plant as a grass roots installation, *i.e.*, independent of the LPG plant.

115. During the period 1961-1966, Northern's studies of the petrochemical business continued. They include market surveys, acquisition studies, and review of petrochemical plant construction and operating costs. By the end of 1966, the helium and LPG plants had proven themselves as profitable. Accordingly, Northern proceeded with the third phase of its original overall diversification plan.



116. On July 3, 1967, Northern filed an application with FPC to authorize delivery of additional volumes of natural gas to Gas Products for fuel and volume shrinkage, incident to the extraction of ethane. Recognizing that the extraction of ethane would cause a reduction in the B.t.u. content of its gas stream, and desiring to avoid the necessity of another complex and lengthy hearing, Northern stated in its application that nitrogen would be extracted from the subject volumes in order to offset the B.t.u. loss resulting from the extraction of ethane. Since the rejection of nitrogen was feasible as an incident of the extraction of helium, Northern assured its utility customers and the FPC that the B.t.u. content of the gas stream delivered to users would not change by reason of the extraction of ethane. Northern proposed that it would use the liquid remaining in the last two flash columns of the helium plant as a low-B.t.u. fuel in the ethane plant boilers, thereby removing from the stream theretofore transmitted to utility customers, about 22 million cubic feet (m.m.c.f.) of nitrogen per day.

117. On December 11, 1967, the FPC approved Northern's application with a specific reference in its order to Northern's agreement to extract enough nitrogen to offset the B.t.u. loss from ethane extraction. *Northern Natural Gas Company*, FPC Findings and Order, No. CP68-5. Plaintiff did divert the flow of low-B.t.u. gas from the helium plant, which had theretofore gone back into the gas stream, to the ethane plant boilers when that plant began its operations.

118. Construction of Gas Products' ethane facility was begun in January 1968 by Fluor Corporation. It began operation in early 1970. The plant was designed to extract ethane from the rich gas residue exiting from the LPG plant, which had been the feed to the helium plant. The residue from the ethane plant then became the helium plant's feed.

Positioning the ethane plant at this stage of the processing at Bushton provided several advantages for Northern. Removing the volumes of heavier components upstream of the helium plant resulted in an approximate 20 percent decrease in the volume of gas the helium plant then had to process (from about 470 to 410 million cubic feet (m.m.c.f.) per day), and a substantial decrease in the cost of processing the gas for helium. The ethane plant better prepared the feed gas by stabilizing the feed conditions and rendering it easier to operate the first flash column in the helium plant. The latter was sensitive to these conditions, and prone to shutting down if they changed. It also extracted trace amounts of the products sought in the LPG extraction, but still left in the gas, and it dehydrated the feed to help prevent freezing problems in the helium plant. A major disadvantage in this arrangement was that it increased the ethane plant's size and investment relative to positioning it elsewhere, *e.g.*, downstream of the helium extraction. However, it had been determined that the positive aspects outweighed the negative.

119. The natural gas is processed in the ethane plant in the following manner. The helium-rich residue gas exiting from the LPG plant at  $-30^{\circ}\text{F}$ . is cooled and sent to a flash column with two chambers. In each chamber the pressure drops, cooling the gas and separating liquids from gases. The gas from the first chamber is extracted and passed through an expander where it is further cooled. Both the gas from the expander and liquid extracted from the first chamber are piped to the second chamber. The gas separated in the second chamber is compressed and piped to the helium plant at  $-30^{\circ}\text{F}$ . as its feed. The liquid left in the second chamber is processed for methane which is returned to Northern's pipeline. The residue from the methane step is processed for ethane which is separated out and stored. The residue from the ethane step is recycled to the LPG plant for further extraction of the heavy hydrocarbons which were not extracted in the original cycle.

120. In the early 1960's, Gas Products constructed an underground storage field at Bushton, and a product pipeline from Bushton to Des Moines, Iowa, and from Bushton to Wichita, Kansas. The storage wells, located in a salt strata, involved an initial capital investment approximating \$5 million. Expansion of the Bushton storage facilities to accommodate the ethane operations, in addition to producing growth of other liquids marketing, increased this storage investment from the initial \$5 million to approximately \$12 million. The pipeline and related pumping and storage, and the six terminal facilities in five states entailed an initial capital investment approximating \$20 million.

121. On March 23, 1967, Northern Petrochemical Company (Petrochemical) was incorporated as a wholly owned subsidiary of Northern. Its purpose was to develop an ethylene petrochemical complex in Joliet, Illinois, to be fed by the ethane extracted from the natural gas by Gas Products at Bushton, and piped to Joliet via another subsidiary's pipeline. Later that year, Northern acquired Mineral Industries, Inc., National Poly Products, Inc., and Varney Chemical, Inc., which became divisions of Petrochemical and provided it with marketable end products to be produced from its ethylene-derived chemicals. Northern subsequently acquired four other plastic conversion companies as divisions of Petrochemical, on November 29, 1968, April 28 and November 30, 1970, and February 10, 1971. Plans were made for a plant to derive ethylene from ethane, but its operation was scheduled for 1971. Until it was built Northern contracted with Chemplex Corporation to convert some of the Bushton ethane to ethylene for the Petrochemical facility. In January 1968, 940 acres were purchased in Joliet for the plant site. Ground was broken on April 19, 1968, for an ethylene oxide-ethylene glycol facility. In August 1969 this facility began using the ethylene produced by Chemplex. In September 1971 the olefins plant went on stream at Joliet,

producing ethylene and propylene. By April 1972, the polyethylene plant was in full production.

122. The olefins plant is designed to produce 800 million pounds of ethylene and 200 million pounds of propylene each year from Bushton feedstocks, including 204,500,000 gallons per year of ethane produced at Bushton. Feedstocks from Northern's pipeline system represent 78 percent of the manufacturing cost of ethylene and propylene. As presently designed, the plant cannot operate on other feedstocks, although it could be modified at an estimated cost of \$35 million and a 2½-year delay to process feedstocks consisting of heavier hydrocarbons than those produced at Bushton. The complex at Joliet is therefore somewhat integrated with the LPG, ethane and helium facilities at Bushton, although to a lesser extent than are the Bushton facilities with one another.

In October 1966, Gas Products filed with the Interstate Commerce Commission (ICC) for pipeline common carrier status and created Hydrocarbon Transportation, Inc. ("Transportation"), as a wholly owned subsidiary. The latter purchased the pipeline facilities from Gas Products, and now owns and operates all of that pipeline system as a common carrier. Constructed by Transportation of a multiproducts pipeline from Bushton to Petrochemical's plant near Joliet, Illinois, began in 1968. The resulting capital investment in pipeline and related facilities increased from the initial \$20 million to approximately \$84 million. It assures Petrochemical of a supply of feedstocks of the proper type.

123. Because of the total integration of facilities at Bushton each processing step is closely toleranced to the designed output of the previous step. A shutdown in any part of the processing chain will cause cessation of activity in the subsequent steps. The LPG steps must be completed before either the ethane or helium plants can produce. The helium steps must be completed before the ethane plant



can produce. To a lesser extent, facilities at other locations depend on the production of the ethane plant. If one of the initial steps is shut down, resulting in a loss of all activity at Bushton, it takes about 75 hours after the problem is corrected for startup and return of the complex to full production.

124. It is not physically necessary to remove nitrogen in order to extract ethane from natural gas. Nitrogen is removed in the process of extracting helium, and this serves the purpose of complying with the FPC order of December 11, 1967, requiring Northern not to reduce the B.t.u. level of the natural gas downstream of Bushton when ethane is extracted. As presently designed, the boilers in the ethane plant are built to run on the high-nitrogen, low-B.t.u. stream issuing from the helium plant which disposes of the nitrogen.

125. All of these integrated operations are in implementation of Northern's original plans, as executed through wholly owned subsidiaries. Helex, for example, has no express contractual agreement with Northern or Gas Products specifically to remove nitrogen from natural gas.

The contract between Helex and Northern dated July 28, 1961, states that Helex will, for a term of 22 years, accept up to 500 m.m.c.f. per day of Hugoton area gas and extract helium therefrom. It further states that Helex will redeliver the gas remaining after helium extraction (including the low-B.t.u. stream) to Northern. The contract between Northern and Gas Products, as amended June 26, 1967, states that the latter is not to lower the B.t.u. value of the gas stream by its removal of ethane, and to accomplish this "by removal of nitrogen or otherwise."

126. Pertinent provisions of the contract between Helex and Northern are as follows:

2.3 Upon completion of the plant, Helex agrees to accept delivery of the volumes of Hugoton area gas

up to 500 MMcf per day thus delivered by Northern from time to time and to process such volumes for the extraction of helium-gas mixture therefrom.

3.1 Northern agrees to, and by these presents does hereby, grant, assign, bargain and sell unto Helex, its successors and assigns, for the term of this Agreement, the right and privilege to prepare, work, manufacture and process the gas delivered by Northern to Helex pursuant to this Agreement for the extraction of helium therefrom; and to extract, withdraw, remove and draw out by any mechanical, chemical or other process, helium-gas mixture in the gas delivered pursuant to this Agreement by Northern to Helex.

4.1 Helex agrees to redeliver or cause to be redelivered to Northern all volumes of gas delivered by Northern to Helex pursuant to this Agreement which are not extracted in the plant.

#### 5.1 Helium

(a) Helex shall pay Northern twenty-eight cents (28¢) per Mcf for the volumes of helium-gas mixture extracted from Hugoton area gas in the plant. Provided, however, that though payments hereunder are related to the volumes of helium-gas mixtures extracted, the parties understand and agree that for the purposes of this Agreement the only thing of value to Helex in the helium-gas mixture is helium.

12.2 The gas redelivered by Helex to Northern shall be the same gas delivered by Northern to Helex after removal of helium-gas mixture thereof by means of the extraction operation of the plant.

16.1 Northern shall not be liable to Helex for its failure to deliver gas and Helex shall not be liable to Northern for its failure to receive gas when such

failure on the part of either shall be due to accident to or breakage of pipelines, machinery, or equipment, fires, floods, storms, weather conditions, strikes, riots, legal interferences, acts of God or public enemy, shut-downs for necessary repairs and maintenance or, without limitation by enumeration, any other cause beyond the reasonable control of the party failing to deliver or receive gas as the case may be; provided, however, such party shall promptly and diligently take such action as may be necessary and practicable to remove the cause and resume the delivery or receipt of gas as the case may be \* \* \*.

127. Northern's contract with Gas Products, dated October 28, 1960, provided the LPG plant with natural gas for its extraction processing. Article II-1 of that agreement gave Gas Products the right to extract hydrocarbons from Northern's natural gas stream, as well as the right to utilize additional volumes from that stream which Gas Products might need for fuel and other incidental uses. Article II-2 required Gas Products to return to Northern what is left of Northern's stream after processing. Article III provided that the term of the agreement was to be 20 years from the date of initial delivery, and from year to year thereafter, unless terminated earlier by any party upon 12 months' prior notice. Article XI dealt with the consequences of the failure of the parties to respectively deliver or receive the gas, with a clause identical to that used in Northern's contract with plaintiff, as above-quoted.

This contract was amended on June 26, 1967, to require Northern, as seller, to deliver additional volumes of natural gas to Gas Products, as buyer, for the extraction of ethane beginning in 1969, with operation at full capacity as of 1974. Article II-3, which required Gas Products to not cause the B.t.u. level of Northern's gas downstream of the Bushton complex to be lower than 975 B.t.u.'s per cubic foot, was amended to include the following provision:

Buyer further agrees that in any billing month, by removal of nitrogen or otherwise, it will cause the "net volumes of gas used", as defined below, to have the same average Btu value as the total gas stream entering Seller's Bushton complex with the result that Buyer's ethane extraction process will, in no event, lower the Btu value of the residue stream returned to Seller below what would be the Btu value of said stream were ethane not extracted by Buyer.

Article V was amended to include a separate payment for volumes of gas used solely in the extraction of ethane.

128. The integration of the facilities of Northern's subsidiaries at Bushton prompted Northern to allocate the costs of each supporting activity to the process supported thereby. For example, both the rich and lean streams passing through the LPG plant use the refrigeration and oil circulation systems. Each stream is charged the costs of these systems in proportion to its respective volume. With 500 m.m.c.f. of rich gas, and 430 m.m.c.f. of lean gas passing through the plant, the rich stream is charged 500/930 of the cost of these systems, and the lean stream is charged the balance. Since the rich stream is processed for the benefit of all three plants, 50 percent of the costs which the rich stream has accumulated by the time it is diverted to the helium plant is charged to the helium facility. Utilities are metered and charged in accordance with the volumes used by each facility. This allocation is an outgrowth of a plan that was proposed to Northern by the engineering consultant firm of Purvin & Gertz ("P & G") in March of 1962. P & G recommended directly charging personnel or material supplied by the LPG plant to the helium plant at cost, plus a 12½ percent return. Utilities supplied by the LPG plant would be metered and charged at cost, plus a 12½ percent return. P & G also recommended that 26 percent of the LPG processing costs be charged to plaintiff. They estimated that it would cost



\$2100 per day, including a 12½ percent return, for Helex to remove the heavy hydrocarbons from the gas so that the helium plant could tolerate the feed. P&G also estimated the total cost of operating the LPG plant process to be \$4000 per day, including a 12½ percent return. Splitting Helex's savings 50/50 between the LPG and helium plants, P & G suggested Helex pay \$1050 per day, or 26 percent of the LPG processing costs.

The cross-charges between the subsidiaries have been reviewed by Northern over the years and are deemed equitable by them.

129. The LPG and ethane plants provide several services for the helium plant. Since helium is what remains as a gas, after all the other constituents of the natural gas stream have been liquefied, the liquefaction performed in the other plants aids the helium plant by preparing a feed it was designed to tolerate, and by reducing the volumes and types of liquids still to be extracted.

The major facilities in the LPG plant that provide a feed conditioning service for the helium plant are:

- (a) rich gas incoming exchanger, chillers, absorber and scrubber,
- (b) gas turbines, waste heat boiler and propane refrigeration compressors,
- (c) the refrigerant propane condensers, economizers and compressor suction drum,
- (d) incoming water storage, softening and treating and LPG plant cooling tower,
- (e) power generators,
- (f) deethanizer and its related coolers and reboilers,
- (g) the dehexanizer and its related reboilers, condensers and exchangers, and,

- (h) the absorption oil exchange, chiller and presaturator.

130. Other benefits are received from the LPG plant. The major utilities provided to Helex through existing Gas Products' facilities, or by expansion of those facilities are:

- (a) the raw water system was expanded,
- (b) the power generation system was expanded by pressing the startup generator into continuous service,
- (c) the steam generation facilities at the helium plant were scaled down and the LPG plant's startup boiler was pressed into continuous service,
- (d) part of the existing steam system in the LPG facility was pressed into service for the helium plant,
- (e) the LPG plant's fire water pumps and fire water tanks were utilized by the helium plant,
- (f) the cooling water makeup water treater was expanded,
- (g) the existing demineralizer for boiler feed water and steam condensate systems was utilized, and,
- (h) the shop, warehouse, laboratory and offices were expanded.

Neither Northern nor Gas Products made any payment to Helex for the separation by Helex of the nitrogen-methane, low-B.t.u. gas mixture which resulted from the helium extraction process in the form of a condensate in the third refrigeration cycle.

131. The cost of operating plaintiff's plant would be substantially the same whether it continued to produce

helium for the Government under this contract, or if the plant was modified to accomplish just the nitrogen rejection function. Only about \$11,000 a year in fuel costs can be saved by discontinuing operation of the helium recycle compressors, the only step which could thus be eliminated.

*The Administration of the  
Helium Conservation Program*

132. Prior to and throughout the period of performance of this contract, Interior consistently viewed the 1960 Helium Act amendments as providing for conservation of helium for long-range future Government and commercial requirements, *i.e.*, the requirements of the Nation. It consistently manifested this view before Congress when seeking appropriations, when explaining the program to Congress, before the public, and in the overall administration of the act. Interior did not administer the helium conservation program for the purpose of storing a specific volume of helium for some predetermined period of time.

133. For example, in justifying its appropriation request for fiscal year 1964, Interior told the Senate, in a report signed by Acting Secretary of Interior John A. Carver, Jr.:

The helium conservation program is not a stockpiling program aimed at assuring an adequate supply of helium for some predetermined uses and for some predetermined period of time. It is a conservation program aimed at curtailing the wastage of valuable natural resource in order that the resource will be available to future Americans for whatever purpose and at whatever time it is needed. \* \* \*

134. This statement also represents the understanding of Stewart L. Udall, the Secretary of the Interior, who approved and signed Helex's contract, who administered the helium program for 8 years, and who (as a member

of Congress) had proposed the amendment which became section 15 of the act, as earlier outlined. This was also the understanding of former Representative Walter Rogers who sponsored the bill which became the Helium Act Amendments of 1960; of former Under Secretary of the Interior Elmer F. Bennett, who presented the helium conservation program to Congress for enactment as the 1960 statute; and of Henry P. Wheeler, Jr., a participant in the Chilson Report, an Interior witness in support of enactment of the Helium Act, the chief Government negotiator of this contract, and the director of the helium activity which administered the program from its inception until March 1969.

135. From 1966 through the spring of 1970 (although modified in form, but not substance, in 1970), Interior set forth its objectives in administering the Helium Act Amendments in its annual congressional "Justification" section for appropriations for the fiscal years 1967 through 1971, in the following terms:

*Objectives*

A. National goal: The single enduring national objective of the Bureau of Mines helium program is to obtain maximum beneficial use of the natural helium resources of the United States.

B. Contributory goals: The Bureau of Mines helium program endeavors to achieve its national goal through the accomplishment of three subsidiary objectives.

1. The production and sale of helium for current beneficial use.
2. The acquisition and storage of helium that would otherwise be wasted in order that this helium may be used beneficially in the future.



3. Research that will contribute to a more effective utilization of the natural helium resources of the United States now and in the future.

136. As noted in tracing the development of the 1960 Helium Act, the helium conservation program was intended to be self-liquidating, and to be financed initially with borrowing authority provided by the Congress out of funds lent by the Treasury Department to Interior. The borrowed funds were to be supplemented and, within 25 to 35 years, repaid with interest from helium sales proceeds. In order to accomplish this, it was necessary for Interior to retain most of the current helium market. Section 6 of the 1960 Helium Act explicitly required Government agencies to purchase their major requirements from Interior's stocks and it was expected that the rest of the "Federal market," i.e., Government contractors and subcontractors, would do the same.

137. In late 1961, however, Kerr-McGee Oil Industries, Inc., in the first private helium production since the 1930's, began producing helium for sale outside of the conservation program. It sold to Government contractors, subcontractors, and others. Initially Kerr-McGee sold its helium at the same price as Interior, namely, \$35 per m.c.f., but by the mid-1960's more private helium plants and the other conservation contractors (but not plaintiff) began to sell excess helium in competition with Interior. The rate charged by private producers thereupon dropped to \$25 per m.c.f. while Interior's stayed at \$35 per m.c.f. In 1967 Interior's helium sales began to decline, principally because a greater share of the helium market was being supplied by these private producers. This resulted in an estimated loss of nearly \$95 million in sales by Interior through 1972, sales which would have otherwise supported the self-liquidating features contemplated by the helium conservation program.

138. In order to stem this flow, Interior proposed regulations in October 1968 (33 Fed. Reg. 5219-20) which would require Government contractors and subcontractors (the rest of the "Federal market"), as well as Government agencies, to buy their major requirements from Interior. However, this action was enjoined on September 22, 1969, in *Air Reduction Co. v. Hickel*, 420 F.2d 592 (D.C. Cir.). By August 1970 Interior had proposed the issuance of an Executive Order directing Federal agencies to require their contractors in the agreements to buy helium from Interior for use in the performance of Government contracts, but no such order has yet been issued.

#### Termination

139. During 1969 the Bureau of the Budget ("BOB") (which in July 1970 became the Office of Management and Budget ("OMB")), selected the helium conservation program as one of the Federal programs which could be eliminated to save money. It was BOB's view that the helium conservation contracts were no longer necessary, and that, unless their budgetary impact could be substantially reduced, the program should be canceled.

140. In 1969 and 1970 Interior conducted an extensive review of the helium program including, among other topics, helium uses, financing, conservation goals, legislation, future helium demand, and future helium supplies. Interior concluded that the problems were primarily financial and could be solved; that the conservation program was still required; and that the contracts should be continued, although on a modified cost basis. This was Interior's position throughout the year 1970.

141. By report dated March 5, 1970, Interior responded to a congressional inquiry regarding the helium program. In its response, Interior forecast what it believed would be the high, median, and low amounts of helium used both in the United States and in the rest of the world through

the year 2000. In each of these forecasts, using 1968 demand as a base from which to project, domestic usage was predicted to rise steadily from the high 700 m.m.c.f., the median 650 m.m.c.f., and the low 650 m.m.c.f. in 1970, to 3,600 m.m.c.f., 2,500 m.m.c.f. and 1,400 m.m.c.f., respectively, in the year 2000. The total amounts projected for domestic use between 1970 and the year 2000 were 70,580 m.m.c.f., 52,230 m.m.c.f. and 34,360 m.m.c.f., respectively. Even the high range was stated to be conservative for it did not take into account new scientific or technological breakthroughs and developments, but simply expansion of then known technology and the normal growth of then known applications. The low figure assumed that there would be future development of technology dispensing with the need for helium, and the substitution of lower cost more readily available materials for helium. The largest end use predicted in the year 2000 was for cryogenic applications (basically electric power, cryogenic research and magnetic levitation). It was expected to rise from 47 m.m.c.f. in 1968 to between a high of 800 m.m.c.f. and a low of 450 m.m.c.f. Use for purging and pressurizing, principally in the space program, the largest then current use of helium, was projected to go from 340 m.m.c.f. in 1968 to between a high of 600 m.m.c.f. and a low of 100 m.m.c.f. by the turn of the century. Use in the space program comprised the second largest item in the high estimate. The low forecast assumed a substantial diminution in space exploration, whereas the high forecast assumed a continued high degree of space exploration and some expansion of the space program.

142. In a memorandum dated March 31, 1970, the Office of Science and Technology in the Executive Office of the President, projected for the Bureau of Mines that the annual domestic demand for helium would reach 6 b.c.f. by the year 2000, and 12.1 b.c.f. by the year 2030. The report noted that there was also a possibility of very much larger

uses. It further stated that the potential for superconducting underground power lines is very great and that magnets for magnetohydrodynamic and fusion generating facilities will almost certainly be superconducting. The National Academy of Sciences, in a study which summarized the unique and essential qualities of helium, concluded that the "Helium Conservation Program should be carefully reevaluated to determine if it can meet helium needs beyond the early part of the 21st century. If such evaluation leaves any question at all about the adequacy of the program, the program should be extended without delay to apply to lower concentrations of helium and more natural gas fields."

Similarly, in a study concluded by the National Science Foundation after the program had ended, it was stated with respect to underground power transmission by superconducting cable: "The abandonment of the Helium Conservation Program is a disaster, to put it mildly."

143. A memorandum of April 7, 1970, to BOB from Secretary of Interior Hickel further illustrates Interior's position at that time on the need for helium conservation. Among the points raised by Secretary Hickel were (a) that the BOB arguments look only at short-term and "fails to recognize the wasting nature of the resource and its importance in the future"; (b) that the total helium consumption for FY 1969 was 86 percent of that predicted and that in any event "[s]hort-term changes and variations cannot be used to predict long-term trends or emerging requirements"; (c) that the comparisons of the current levels of production and use with the volume in storage "are not valid measures of the need for helium conservation"; (d) that "[t]he program is designed to meet current needs and to provide an assured supply for increased use of helium in the future when presently known helium resources are exhausted"; (e) that, with respect to BOB's discussion about "loose" termination provisions and com-



parisons of continuing or terminating the program, BOB should recognize that even on a short-term basis the budget impact of terminating and having to pay \$160 to \$200 million in anticipated profits could exceed the cost of continuing the program on a reduced basis; (f) that "[t]he helium conservation program has not been proved unnecessary \* \* \*" because, due to the limited nature of the resource and the withdrawal of helium-bearing natural gas for fuel purposes, "there is no assurance of a continuing future helium supply"; (g) that the unique uses of helium, and its long-term future value, are being ignored by BOB; (h) that the present problems are financial and can be solved; (i) that the expectation that helium in the future may be available from low helium content natural gas depends on natural gas supplies not yet discovered; (j) that the cost of extracting helium from lean streams may be \$40 to \$70 per m.c.f. as asserted by BOB but are more likely to be in the range of \$175 to \$200 per m.c.f.; (k) that "[o]ver the long term, the present supply-demand picture indicates strongly that helium placed in storage now offers the only assured future supply for essential Government and other needs"; (l) that there have been no discoveries of helium since 1943 comparable with known helium-rich sources presently being conserved; (m) that "[t]he supply of helium in helium-bearing natural gas beyond about 1990 is speculative"; (n) that although the magnitude of the future demand is unknown, helium has recently been used in the space exploration area, underwater exploration area, and the superconductivity area, especially with regard to power generation and transmission, and if the large-scale development of any of these areas does materialize, large volumes of helium will be required; (o) that "[b]eneficial future returns from a continued helium conservation program should offset by far its monetary cost"; and (p) "the helium conservation program should be continued \* \* \*."

144. In a further attempt to save the conservation program, Interior began negotiating in May 1970 with the four helium conservation contractors in an effort to reduce the contract price. Clearance to engage in these negotiations was received from John C. Whitaker, Deputy Assistant to the President, whose responsibilities included liaison between natural resource agencies. Interior reached a tentative agreement with one of the contractors, National Helium, in September 1970 which substantially met Interior's terms, and agreement with two other contractors looked promising at that time. Based on these continuing negotiations, Interior submitted its request to Congress for additional appropriations of \$56.1 million for fiscal year 1971 in September and November 1970. The funds were requested for continuation of the helium program at a reduced annual cost. The tentative agreement with National Helium was submitted to OMB (successor to BOB) with a recommendation that clearance be given to conclude the agreement. However, no response was received from OMB, and no further action was taken in this regard by Interior. It was Under Secretary Russell's view, as late as January 1971, that the negotiations were worth pursuing.

145. During the latter part of 1970 Interior submitted a request to OMB for an \$18 million appropriation for the helium program for fiscal year 1972 on the assumption that the program would be continued on a modified basis. However, by "passback" memorandum on December 11, 1970, OMB disallowed the request stating:

The allowance reflects a decision to terminate the helium conservation program contracts, under the following assumptions:

—announcement made January 1 or thereabouts, with deliveries accepted through March.

—\$42 M to be requested as a FY 1971 supplemental to finance plant buyout costs.

146. At that time Under Secretary Russell had not made any decision to terminate the helium contracts, nor had Interior made any request for \$42 million as a fiscal year 1971 supplement to finance plant buyout costs, on an assumption of termination.

147. On the contrary, by letter of December 31, 1970, Under Secretary Russell strongly appealed to President Nixon for reconsideration of OMB's disallowance of Interior's fiscal year 1972 budgetary requests. Mr. Russell appealed only with respect to the five items which he considered "most critical." Among them was the helium conservation program. Summarizing Interior's position, he wrote:

*Helium Conservation Program:* Restoration of the \$18 million for the purchase of helium in fiscal year 1972 will allow the Department to continue the program at a reduced rate of payment. We have negotiated with the companies pursuant to the Administration's instructions, and consider continuation at the reduced payment level and reduced rate of production the most viable course of action to assure future availability of helium at least public cost (Attachment #2).

Attachment #2 reads, in pertinent part:

Appeal of the Decision to Unilaterally  
Discontinue the Helium Conservation Program

The Department requested \$18,000,000 to pay for fiscal year 1972 purchases of helium. In our allowance, this entire amount was disallowed for fiscal year 1972, and \$42.4 million was added as a fiscal year 1971 proposed supplemental for payment of the unamortized portion

of the contractors' plants, after announcement of the unilateral cancellation of the contracts. \* \* \*

The continuation of the helium conservation program to recover and store helium in advance of need is the only positive assurance that helium will be available in the future to meet user needs and to solve pressing environmental problems in power generation, power transmission, transportation, industrial applications, space and marine programs, and other uses, the total requirements for which are in strong prospect of increasing.

We urge that approval be given for conclusion of our negotiations to continue the helium conservation program at the proposed reduced rate and cost, and that the FY 1972 budget estimate of \$18,000,000 be allowed.

148. Throughout 1970, Interior and Under Secretary Russell totally supported the continuation of the helium conservation program, and the funding of the contracts for purchase, conservation and storage of helium for future needs.

149. Finally (*see finding 3 supra*), plaintiff on December 24, 1970, brought suit in this court alleging breach of contract by the defendant for nonpayment of large amounts overdue under its contract. The details of the Government's failure to meet payments due are set forth in *Northern Helix Co. v. United States*, 197 Ct. Cl. 118, 455 F.2d 546 (1972). Plaintiff has continued to tender helium to the Government as an act in mitigation of damages for breach, also as detailed in the above-cited decision.

150. After the filing of the petition herein, in a memorandum dated January 4, 1971, OMB responded to Mr. Russell's appeal, rejecting it. In justification of disallowance of the appeal, the memorandum stated, in part:



The decision to terminate the helium conservation program contracts should be upheld; the program is no longer justified.

*The need for termination—*

The circumstances which indicate the need for termination are as follows:

- Helium sales (both Bureau of Mines sales and total U.S. sales) have dropped in every year since 1966. Total sales are 60% of what was anticipated when the program was initiated in 1960.
- Present stockpile will take care of estimated essential Government requirements (which the Helium Act Amendments were aimed at providing) through the year 2000. At current rates of consumption, the present stockpile will satisfy *total* demand for almost 40 years.
- Technological improvements since 1960 have reduced the cost of extracting helium from leaner gases.
- The above three points constitute "other circumstances of similar nature" within the meaning of the termination provisions in the helium contracts.
- Since the Helium Act Amendments of 1960 were passed, there has been a discovery of a new helium-rich field with estimated recoverable helium of from 5 to 15 billion cubic feet.

The memorandum concluded:

In light of the discussion above and the analysis and discussion which have taken place on this program, we believe that all of the points in the appeal have been met and that the decision to terminate successfully withstands the appeal.

The budget decision assumes that the termination action will be a Secretarial determination, with announcement in early January, that circumstances exist which satisfy the termination provisions of the contracts. \* \* \*

151. Under Secretary Russell understood this to mean that the budget, as finalized, would reflect a budget determination that the helium contracts were to be terminated.

152. By letter of January 6, 1971, two U.S. Senators addressed questions to George Schultz, Director of OMB, regarding the proposed cancellation of the helium contracts. On January 11, 1971, Deputy Assistant to the President, John C. Whitaker, manually wrote the following note to Donald Rice, Assistant Director of OMB, at the top of this January 6 correspondence:

As I said you've got to talk on the hill before helium is cancelled.

153. In a memorandum dated January 18; 1971, to Under Secretary Russell, Assistant Secretary Dole wrote:

Regardless of the OMB decision relative to the helium program, I am of the opinion that a large assured supply of helium is essential for the future. The decision of OMB to cancel the present contracts will, I fear, jeopardize this assurance of a future supply. \* \* \*

Assistant Secretary Dole, in his deposition of January 23, 1973, stated that he was still of the same view.

In describing events in the week just prior to January 26, 1971, Harold Lipper, Chief of the Division of Helium, Bureau of Mines, stated in his deposition:

Well, I think we have pretty well covered it: that the budget situation was appealed; and the next thing

that I knew about is, we were asked for material that might be used in connection with possible termination of the contracts.

154. During the week immediately prior to Tuesday, January 26, 1971, Under Secretary Russell again reviewed the helium conservation program, meeting with several people from the Mineral Resources and Solicitor's Offices of Interior, for briefings. Termination of the contracts was discussed, but Secretary Russell wanted more specific information as to possible bases for termination. In response, by memorandum of Friday, January 22, 1971, Assistant Secretary for Mineral Resources Dole submitted to Mr. Russell for his review a draft document entitled "Termination of the Four Helium Purchase Contracts," along with an outline of sources relied upon as the bases for statements in the draft, and copies of 19 documents relating to helium and the helium program which were the sources of information. The draft was prepared by the Mineral Resources and Solicitor's Offices of Interior.

155. On Saturday or Sunday, January 23 or 24, the text of a publication "Special Analyses, Budget of the United States Government, Fiscal Year 1972" was sent to the Government Printing Office from OMB for final printing. The text stated that Interior's minerals program budgetary demands would decrease for fiscal year 1972 due to:

\* \* \* [A] decision by the Secretary of the Interior to terminate contract purchases of helium because of changes in anticipated future supply and demand.

The budget, its summary, analysis, and appendix, as formally released on Friday, January 29, 1971, all indicated that the helium contracts would be terminated by the Secretary of Interior.

156. On the morning of Monday, January 25, 1971, Under Secretary Russell dictated a message via car telephone for Assistant Secretary Dole. In it Mr. Russell instructed Mr. Dole to contact those members of Congress who would be concerned about the cancellation of the helium contracts, and to justify the cancellation to them. In conclusion Mr. Russell stated:

The cancellations have to be handled in such a manner that (the decision to cancel) is the decision of the Secretary of the Interior and not the decision of the President or OMB or anyone else. (Of course, I realize that you know this.)

157. In a note to Assistant Secretary Dole from Under Secretary Russell's secretary relating to helium, and dated January 25, 1971, there was a postscript stating:

P.S. We have a large stack of material on this matter, which the Solicitor's office brought down today.

158. By letter of Tuesday, January 26, 1971, Under Secretary Russell informed plaintiff and the three other contractors who had participated in Interior's helium conservation program, that their contracts were terminated, pursuant to article XII, para. 12.1, with purchases to cease effective at 8 a.m., e.s.t., March 28, 1971. This letter is hereinafter referred to as the "Russell Termination," or purported "Russell Termination." His letter was the same as the draft which had been previously submitted to him on January 22, 1971, by the Mineral Resources and Solicitor's Offices of Interior.

159. In his letter Under Secretary Russell deemed continued purchases under the helium contracts "unnecessary to accomplish the purposes of the Helium Act." Pertinent text of the Russell Termination is as follows:



### TERMINATION OF THE FOUR HELIUM PURCHASE CONTRACTS

After careful and intensive review of the helium conservation program, I have reached the conclusion, pursuant to paragraph 12.1 of Article XII of each of the contracts listed below, that the continued operation of the below listed helium extraction plants under the terms of the contracts, as indicated, and the continued purchase of helium-gas mixture extracted in said plants are unnecessary to accomplish the purposes of the Helium Act:

\* \* \* \* \*

The substantial diminution that has occurred in the requirements of helium for essential Government activities, the discoveries of new helium resources that have been made since the contracts were entered into, and the availability of helium, within economic limits because of improved technology, from natural gases which would previously not have been so regarded because of low helium content—are all factors which underlie my conclusion.

The primary objective of the Helium Act is to "provide, within economic limits, through the administration of this Act, a sustained supply of helium which, together with supplies available or expected to become available otherwise, will be sufficient to provide for essential Government activities." Over the past four years, there has been a substantial diminution in the requirements of helium for essential Government activities. The Government requirements fell from a high of 707 million cubic feet in 1966 to 222 million cubic feet in 1970. The Government requirements in 1970 were 69% lower than they were in 1966. In the face of the experience over those 4 years, I cannot reach the conclusion that Government requirements for

helium will steadily increase in the future. Indeed; there is no firm assurance whether or when they will increase. The five principal helium-using agencies of the Government have submitted to the Department of the Interior estimates of their needs through the year 2000. Only one of the five agencies forecasts a marked increase in helium requirements. Yet, even if the agencies' estimates should prove accurate, those estimated requirements can be satisfied through the year 1995—a quarter of a century—from helium which the Government now has in storage and which it will obtain from the operation of existing Government plants. In these circumstances, the substantial diminution in Governmental requirements for helium since 1966 leads me to the view that the continued operation of the plants mentioned above and the continued purchase by the Government of helium-gas mixture extracted therein are unnecessary to accomplish the purposes of the Helium Act, particularly when there are taken into account the new discoveries of helium resources that have been made since the execution of the contracts and the availability within economic limits of helium from a much wider range of natural gases than was the case before 1961.

Discoveries, since the execution of the contracts, of new natural helium resources of considerable magnitude are another factor which, in my opinion, makes the continued operation of the five plants mentioned above and the continued purchase by the Government of helium-gas mixture extracted therein unnecessary to achieve the purposes of the Helium Act. The Tip Top Field in Wyoming constitutes a proved reserve of approximately three billion cubic feet of helium and is estimated to contain an additional twelve billion cubic feet of helium. When other new discoveries made

since 1961 are taken into consideration, there exist in the order of eight billion cubic feet of proved reserves with the possibility of a total of twenty-four billion cubic feet, all of which is contained in shut-in fields as a constituent of natural gas which has no value as fuel. The helium content of the gases in these fields is three-tenths of one percent or more, and the gases are thus among the "richer" gases so far as helium is concerned. There are, therefore, large sources of helium which will be available if, in the future, more helium is required for essential Government activities than is now in storage or will be recovered in Government plants. In my opinion, it is reasonable to expect that helium could be produced from these reserves at a cost to the Government in a range of \$10 to \$20 per thousand cubic feet, a range well within economic limits.

Furthermore, there has been such improvement in technology with respect to the extraction of helium that sources formerly disregarded or regarded as uneconomical may now be considered. At the time of the enactment of the Helium Act Amendments of 1960, the alternative to recovery of helium from the "richer" gases was thought to be recovery from the air at costs of \$1000 to \$2000 per thousand cubic feet. Technology developed since the execution of the contracts has made it possible to recover helium from "leaner" natural gases—that is, gases with as little as 0.05 percent helium. Evaluation by the Bureau of Mines of published information on potential future discoveries of natural gas in the United States shows that large volumes of natural gas containing about one-tenth of one percent helium can be expected in the future; it appears to me that a range of from \$40 to \$70 per thousand cubic feet is a reasonable estimate of the cost of recovering helium from such gases and

that such costs would be within economic limits when viewed, as they must be, against the distant and uncertain future of helium requirements for essential Government activities. In my opinion, the "leaner" natural gases which will be discovered in the future will afford additional large sources of helium which may be recovered within economic limits to satisfy essential Government activities, if and when occasion requires, and therefore, the continued operation of the plants mentioned above and the continued purchase by the Government of helium-gas mixture extracted therein are unnecessary to accomplish the purpose of the Helium Act.

160. Under Secretary Russell was the highest ranking official of the Department of Interior on January 26, 1971. He had succeeded Secretary Hickel. Rogers C. B. Morton was sworn in as Secretary of Interior on January 29, 1971.

161. Under Secretary Russell continued with informal efforts to have funds included for helium conservation until the President's fiscal year 1972 budget was presented on January 29, 1971.

162. Had Mr. Russell's appeal to OMB been granted, and had funds been made available, he would have been in favor of continuing the conservation contracts. He was personally in favor of conserving all natural resources for which funds were available. He testified at trial as follows:

Q. No, I'm asking you, assuming that your request had been granted, that your appeal had been granted and that funds were made available, would you have been in favor of continuing to extract helium from the Hugoton field?

A. Yes, I would have been in favor of continuing to buy as much helium as we had funds for.



It is concluded that Under Secretary Russell's January 26, 1971, letter did not reflect his own opinion and his own determination that the circumstances set forth in the "Termination" provision of the contract had been met. On the whole record, his action reflects rather that it was based on OMB refusal to approve further funds for the helium conservation program.

163. Without additional appropriations, Interior would not have been able to meet its obligations under the helium contracts. The only way funding could have been achieved without OMB approval was directly by Congress. However, Interior could not request funds from Congress without OMB approval. Moreover, there appeared to be some opposition to the helium program in Congress at the time.

164. As indicated by his testimony at trial, Under Secretary Russell presently believes that the helium in the Hugoton field and elsewhere should be conserved, but that the limitations of the Helium Act do not permit continuation of the conservation program. He also believes that if all the helium now in the Hugoton-Panhandle fields were saved, it would serve a useful purpose in the future, and that conservation of helium is a far-sighted Government project.

165. It is Assistant Secretary of Interior Hollis M. Dole's present personal view that the helium which had been conserved under the conservation program should continue to be conserved. Dr. E. F. Osborn, Director of the Bureau of Mines, personally believes that helium, as with all natural resources, should be saved for needs which will develop in the future. Harold Lipper, Chief of the Helium Activity in the Bureau of Mines, believed in 1970 that the conservation contracts should be continued with proper cost modifications, and personally believes at the present time that helium should still be conserved. At his January 26, 1971, confirmation hearings, Secretary of Interior-designate Rogers C. B. Morton also evidenced

the personal view that helium, as a resource, ought to be conserved.

*The Termination Test Based on  
"A Substantial Diminution In Helium Requirements"*

166. In September 1969 the five specific Federal agencies which were then the principal Government users of helium (NASA, Department of Defense, Atomic Energy Commission, Weather Bureau and the National Bureau of Standards) provided Interior with estimates of their helium requirements through the year 2000. Interior has received estimates from no other Federal agencies. With minor revisions by NASA in February 1970, the estimates stood as follows in January 1971:

Time Period	Annual requirements— Million Cubic Feet (m.m.c.f.)					
	NASA	DOD	AEC	WB	NBS	Total
1970-1972	150	60	56	9.5	0.4	275.9
1973-1975	500	60	56	9.5	0.4	625.9
1976-1980	1,000	60	56	9.0	0.4	1,125.4
1981-1985	1,600	76	56	8.0	0.4	1,740.4
1986-1990	1,600	76	56	7.0	0.4	1,739.4
1991-1995	2,000	71	56	5.0	0.4	2,132.4
1996-2000	2,000	71	56	4.0	0.4	2,131.4
Total, 1970-2000	42,950	2,130	1,736	222.0	12.4	47,050.4

These estimates do not reflect uses now or in the future by reason of research and development in electrical energy generation and transmission, transportation, or other potential uses not under the jurisdiction of the above-named agencies.

167. The AEC estimate did not include helium forecasts for production of energy through the harnessing of nuclear

fusion, nor for private power company requirements, but solely AEC needs. Neither the Federal Power Commission nor any other agency was requested to supply estimates on the potential of helium for underground transmission of electrical energy through super-conducting cables.

168. In any event, even the five Government agencies upon which Mr. Russell relied for his statement that there has been a substantial ~~diminution~~ in Government need for helium forecast an annual requirement in excess of 2.13 b.c.f. of helium by 1990, a requirement which they expect to continue at least to the year 2000.

When it sought passage of the Helium Act of 1960, Interior supported its position in favor of the legislation with a lesser forecast than that, namely, an annual national need of 2 b.c.f. by the year 2000.

169. To the extent that fluctuations in current sales of helium by both Interior and private producers may have a bearing upon the issue of whether there has been "a substantial diminution in helium requirements," the following sales figures have been estimated on a calendar year basis. The estimates are somewhat inexact since Interior was obliged to rely on the replies of private producers in response to inquiries as to their domestic and export sales.

*Interior's*  
Estimated Helium Sale in U.S. (m.m.c.f.)

Calendar Year	Sales by Bureau of Mines			Estimated Sales by Private Producers		Total Domestic Sales	
	To Fed. Agencies	Con-tractors	Govt. Subtotal	Domestic	Export	Domestic	Total
	To Fed.	To Fed.	To Coml. Customers	Domestic	Export	Domestic	Total
1960	•	•	•	0	0	480	480
1961	•	•	•	0	5	550	555
1962	•	•	•	20	10	620	630
1963	474	93	567	25	15	652	667
1964	499	100	599	30	20	697	717
1965	479	122	601	40	20	739	759
1966	507	200	707	125	15	934	949
1967	419	85	504	260	40	867	907
1968	400	46	446	330	60	808	868
1969	348	2	350	310	90	671	761
1970	220	2	222	310	110	541	651
1971	•	•	•	275	130	445	575
1972	•	•	•	305	150	475	625

\*Not available



170. The decline in Government helium requirements from 707 m.m.c.f. in 1966 to 222 m.m.c.f. in 1970, cited by Mr. Russell in support of the determination that there had been a substantial diminution in helium requirements, was addressed solely to the decline in amounts actually sold by the Bureau of Mines to Federal agencies and contractors. It did not include sales by the bureau to commercial customers, nor sales by private producers to Government agencies, Government contractors, or others.

171. Because the self-liquidating features of the helium conservation program had already been circumvented, Interior was unable, in January 1971, to determine how much helium was actually being used by the specified Government agencies, and by their contractors and subcontractors, and was thus unable to determine how much helium was used for Government agency purposes, as opposed to general and private purposes of the Nation.

172. In January 1971 the Department of Interior released its annual official publication on Commodity Data Summaries, in which the Bureau of Mines reported on the supply and demand figures for helium. The bureau reported that, although domestic helium usage had declined from its peak in 1966, usage was expected to remain at the then present low level through 1971, but then to increase to between 3 and 5 b.c.f. annually by the year 2000 as new programs which were then in the conceptual stage became operational.

173. The Russell termination statement does not give consideration to helium requirements beyond the year 2000.

174. Present and proposed requirements for helium have been touched upon in prior findings. They are hereinafter enumerated in greater detail.

175. Generally, the major current uses of helium are for pressurizing and purging, controlled atmospheres, re-

search, welding, lifting gas, leak detection, cryogenics, chromatography, heat transfer and synthetic breathing mixtures. The primary pressurizing and purging use is in the space program, to pressurize and purge the engine, propellant and various other systems in the space and launch vehicles, as well as ground support equipment. Helium is used to maintain a controlled atmosphere for growing crystals for transistors, in processing fuels for nuclear energy purposes, and for cooling vacuum furnaces. In shielded arc welding applications, helium permits high welding speeds and deep weld penetration. As a lifting gas, its primary use is in weather monitoring, and astronomical study. Helium provides a rapid and reliable method of checking for the absence of the most minute leaks in a variety of products. Helium is the preferred carrier gas in chromatographic instruments used to determine impurities in a variety of industrial products, especially petroleum, chemical compounds and pharmaceuticals. It has various medical applications. As a breathing mixture, helium provides the ability to explore lower depths of the ocean. Each of these uses was acknowledged in the environmental impact statement filed by Interior on November 13, 1972, in connection with litigation initiated by the other three conservation contractors (*see* findings 11, 224-27) to enjoin termination.

176. Presently under development is the use of helium in high temperature gas cooled nuclear reactors which employ helium because it does not become radioactive; because contaminants are easily removed; because it does not react chemically with reactor fuels or components; and because it permits higher operating temperatures, resulting in higher operating efficiencies. In addition, when helium is employed, thermal pollution tends to be lower than from other nuclear or fossil fuel electric generating plants. The helium acts as a heat transfer medium, transferring heat from the nuclear reactor core to the steam generator

which produces steam to run the turbines which, in turn, produce electricity.

Helium-cooled reactors have been constructed in the United States, England, and Germany, and a number of additional ones were on order by the electric power industry as of the end of 1972. A good portion of future nuclear installations are likely to be helium-cooled breeder reactors, which produce new fuel supplies.

Somewhat further into the future is the development of nuclear fusion power which promises to produce clean electrical energy. Helium-based technology would play a vital role in any such development both as a coolant and in the magnetic confinement of fusionable plasma.

177. Because helium liquefies at  $-452.1^{\circ}\text{F}$ . (only  $7.6^{\circ}\text{F}$ . above absolute zero) and is the only known element to remain liquid down to temperatures approaching absolute zero, solidifying only under pressure, it is indispensable in the field of cryogenics, that is, a field of science employing temperatures below  $-430^{\circ}\text{F}$ . One physical phenomenon occurring in this temperature range is "superconductivity." Below a transition temperature characteristic of the material, many metals and alloys lose their resistance to the flow of electricity and become superconductors of electricity, hence the term superconductivity.

The practical application of this phenomenon is that once an electric current is started in a superconductor it will flow indefinitely without loss of energy, and without the introduction of new energy, as long as the system remains below the transition temperature.

178. On June 4, 1971, the President sent a message to the House of Representatives announcing his program to assure this country of an ample supply of clean energy. It included research and development efforts on magnetohydrodynamic power cycles, underground electric power

transmission, advanced nuclear reactor concepts, and controlled thermonuclear fusion.

179. Superconducting magnets, now in operation throughout the world, produce intense magnetic fields at about one-tenth the cost of producing comparable magnetic field strength with conventional magnets. For example, a superconducting magnet constructed at Argonne National Laboratory cost \$400,000 in refrigeration expense over a 10-year period, whereas electric power costs for a conventional magnet over that same period would have been \$4 million. The uses for such magnets include research in high-energy or plasma physics, in suspension and guidance of high-speed land vehicles (by use of the repulsion characteristic of magnets to achieve levitation), in control and containment of the fusion reaction, in cancer therapy, in loss-free energy storage, and in ore separation.

180. Japan, France, Poland, West Germany, and the Soviet Union, in addition to the United States, are engaged in research and development on generation of electric power by magnetohydrodynamic power cycles (MHD), a more efficient method of converting coal and other fossil fuels into electric energy by burning the fuel and passing the combustion products through a magnetic field at very high temperatures. This method of power generation would increase the amount of energy extracted from fuel, while at the same time cutting costs and pollution. For economic full-scale power generation, an MHD plant would require superconducting magnets which, in turn, require helium.

181. As part of the President's energy program, on November 1, 1971, Interior contracted with Edison Electric Institute, Inc., and Union Carbide Corporation (Linde Division), for research and development of an underground superconducting AC power transmission cable. Underground superconducting cables contained in pipes filled with liquid helium would permit transmission of large



blocks of power underground through congested areas with negligible loss of energy, and it is estimated that one such 20-inch pipe filled with liquid helium could carry more power than New York City was using as of September 1970. In addition to increasing the current-carrying capacity of a cable system by a factor of 20, there is an indicated cost saving of about 50 percent in a superconducting system over a conventional system of the same capacity. The Office of Science and Technology, Executive Office of the President, reported to Interior in March of 1970 that "the potential here is very great."

182. Prototype superconducting electric motors have been built with up to 3,250 hp., and utilizing relatively less energy. Others are under development for various industrial applications, including steel and aluminum production. Use of these motors for ship propulsion systems has been of special interest to the U.S. Navy, where a prototype ship propulsion system is being fabricated. They are also of interest to Britain's Ministry of Defense where prototypes have been built. Superconducting magnets have been used in Japan and Germany to magnetically levitate and support prototype high-speed trains, and the U.S. Department of Transportation has sponsored studies of such trains by the Ford Motor Company and Stanford Research Institute for high-speed, long-distance travel. This form of levitation is superior to an air cushion which creates problems, for example, when the train passes through a tunnel.

183. Some additional Federal agency on-going projects which involve the use of helium include: U.S. Air Force support of research on airborne superconducting generators and superconducting magnets; U.S. Army studies of energy storage and rotating machines; Department of Interior sponsorship of work on electric power transmission and MHD; and Atomic Energy Commission sponsorship of work on power transmission and superconducting magnets for fusion reactors.

184. The Stanford Research Institute ("SRI"), a highly respected commercial research and analysis organization, completed three projections of future domestic helium demand under contract with plaintiff or its parent Northern, as well as with other helium conservation contractors. The September 1969 study assumed, *inter alia*, that there would be an ample supply of helium to meet all requirements, and a continuation of present-day prices. The February 1971 and March 1973 studies used this same assumption, but also analyzed demand assuming a lower supply and consequently higher prices, namely, a doubling in price by the year 2000, again by 2025, and again by 2050.

In each of these reports, the assumption was made that the helium conservation contracts entered into in 1961 would continue to completion, and that a high level of economic activity would prevail. While the 1969 estimate shows the inclusion of a small amount for exports, none is apparent in either the 1971 or 1973 reports. The estimates of probable annual requirements for selected future years were as follows:

*SRI Annual Helium Demand Projections*

Year	Billion Cubic Feet (b.c.f.)					
	Ample Supply			Lower Supply		
	Report			Report		
	1969	1971	1973	1969	1971	1973
1975	1.5	1.1	.8	—	1.1	.8
1985	2.8	2.4	1.4	—	2.4	1.4
2000	5.0	5.0	3.2	—	3.8	2.4
2025	7.9	17.9	12.8	—	8.9	6.2
2050	12.0	67.5	44.7	—	23.2	16.5

The 1971 report indicates changes that were made from the 1969 report as a result of subsequent research. The 1973 figures are lower than the 1971 estimates, primarily

due to two independent factors. One was an assumed substantial drop in the birthrate which would induce a lower gross national product and hence reduced energy consumption, a prime area for helium demand. The other factor was a substantially reduced estimate of NASA activities.

185. Breaking the usage down into its components, the 1971 and 1973 reports estimated the following annual mounts would be used for cryogenic applications (electric power, cryogenic research and magnetic levitation), and aerospace requirements (pressurizing and purging) by the year 2000.

*SRI Estimated Annual Helium Usage in 2000 (b.c.f.)*

	Cryogenic		Aerospace	
	1971	1973	1971	1973
Ample supply	.921	.810	1.600	.150
Lower supply	.640	.625	1.400	.90

186. With declining reserves expected after the normal expiration of these helium conservation contracts in the 1980's, SRI believed a lower supply to be the proper assumption, beginning in the next century.

187. The assumption of ample supply at set price was also the basis for Interior's projection of an annual demand of 2 b.c.f. of helium in its 1960 appearances before Congress when it strongly supported the helium conservation legislation. In 1970 Interior forecast an annual helium demand for the year 2000 within the range of 1.4 b.c.f. and 3.6 b.c.f. The high range was, moreover, not dependent upon new scientific or technological breakthroughs but simply normal growth of known applications. Interior, in fact, also used an SRI helium study dated 1969 in its final environmental impact statement supporting a later termination notice of February 2, 1973.

188. If the helium conservation program were terminated, and this resulted in a helium shortage, the cost of helium would be prohibitive, and large scale applications

would become economically unattractive, dampening demand. The only projections of future requirements deemed relevant, therefore, are those predicated upon a continuing conservation program and an ample supply of helium.

189. In January 1971, at the same time Under Secretary Russell stated in his termination notice that he could not "reach the conclusion that Government requirements for helium will steadily increase in the future," Interior published its annual 1971 Commodity Data Summaries under the names of Acting Secretary Russell and the Director of the Bureau of Mines. It forecasted that:

Helium usage in the United States \* \* \* should increase as new programs, now in the conceptual stage, enter developmental and operational phases. In the long-term, it is anticipated that helium usage will reach 3-5 billion cubic feet annually by the turn of the century.

190. In connection with the injunction litigation involving the other three conservation contractors (*see* finding 11), Interior's Bonneville Power Administration, responding to Interior's 1972 Draft Environmental Impact Statement, projected that by the year 2000 approximately 5 b.c.f. of helium will be required annually for electric power use.

191. Lawrence Radiation Laboratory projected that within the next 50 years there will be 87 nuclear fusion plants requiring an inventory of from 20 to 30 b.c.f. of helium.

192. There have been no official forecasts by Interior, nor any other agency, indicating that helium usage will not increase above current levels. Differences of opinion have revolved solely around the degree of increase, not on whether an increase will occur.

193. The estimates of future helium requirements for just the five specified Federal agencies to which Under



Secretary Russell confined his termination notice were the same estimates Interior had made in February 1970 when it forecast continuously increasing need. They are estimates which did not take into account all governmental activities, such as those of the Department of Transportation, navy ship propulsion and other Government-sponsored or regulated activities. There were no new evaluations of requirements made between December 31, 1970, and January 26, 1971, when the termination notice was dispatched.

*The Termination Test Based on  
"The Discovery of Large New Natural Helium Resources"*

194. Generally speaking, substantially all of the known helium reserves of the United States contained in natural gas are being depleted as the gas is marketed for fuel, and the overwhelming bulk of it will be gone by about 1990. After that approximate date, helium extracted from natural gas will have to come from previously conserved helium, from small quantities extractable from remaining "shut in" (uneconomical) fields, or from helium discoveries, if any, made in the meantime.

195. Natural gas, primarily fuel gas, is the only known source of helium other than the atmosphere, and helium has never been recovered from the atmosphere on a large scale. Recovery from the atmosphere requires enormous expenditures of energy, with resultant pollution and very high cost.

196. Helium may also be produced as a by-product of the nuclear fusion of hydrogen, if and when nuclear fusion is ever developed for power production, but helium so produced would provide but a nominal percentage of anticipated future requirements.

197. Helium in natural gas is associated with "helium-rich" gases (natural gas with a helium content of 0.3 of 1 percent or greater), with "lean" streams (natural gas with

a helium content less than 0.3 of 1 percent), and "shut-in fields" (fields not now being produced for various reasons, e.g., the natural gas is not currently valuable for fuel). Shut-in fields may be either rich or lean in helium.

198. Estimates of helium reserves are categorized as "proved," "probable," "possible," or "speculative." As used by Interior, "proved" reserves describes those which have demonstrated the ability to produce by either actual production or conclusive formation test. These reserves define the current estimated quantity of natural gas and natural gas liquids, which analysis of geologic and engineering data demonstrates with reasonable certainty, to be recoverable in the future from known oil and gas reservoirs under existing economic and operating conditions. "Probable" reserves means reserves which are believed to exist, on the basis of some drilling, but which need further drilling and evaluation to be classified as proved. "Possible" reserves are those which may result from new field discoveries in areas of established production. "Speculative" reserves are those which may result from new discoveries where sedimentary formations are present but there is no prior production history.

199. As of January 1, 1971, Interior estimated resources of helium in the following categories and amounts:

(a) The proved reserves were comprised of 27.7 b.c.f. stored under the conservation program, in part under this contract, in the Cliffside field, plus 136.6 b.c.f. in helium-rich natural gas, 10.3 b.c.f. of which were in shut-in fields. Eighty-three percent of this 136.6 b.c.f. was contained in three fields—the Hugoton field of Kansas, Oklahoma and Texas, the West Panhandle field of Texas (the sources of gas being processed by plaintiff), and the Keyes field of Oklahoma. The balance is contained in 98 small isolated gas fields throughout 10 states.

(b) The probable reserves were 16.8 b.c.f. in helium-rich natural gas, and 67.6 b.c.f. in lean gas. The rich gases all represented shut-in reserves, with 75 percent of the volume located in the Tip Top field of Wyoming. The lean gas reserves, however, were estimated from depleting sources, *i.e.*, sources currently being used for fuel.

(c) The possible and speculative reserves, estimated at 218.9 and 309.5 b.c.f., respectively, ranged in helium content from 0.006 percent to 0.278 percent, averaging about 0.076 percent helium, and were located throughout the United States. As these were in yet to be discovered fields, none would be depleting as of January 1971.

<i>(d) Category of Reserve</i>	<i>Estimated helium volume (b.c.f.)</i>	
Proved:		
Depleting helium-rich fields:	126.3	
Shut-in helium-rich fields:	10.3	
Conservation storage:	27.7	
	<hr/> 164.3	164.3
Probable:		
Shut-in helium-rich fields	16.8	
Depleting helium-lean fields	67.6	
	<hr/> 84.4	84.4
Possible:		
Nondepleting, lean helium content fields		218.9
Speculative:		
Nondepleting, lean helium content fields		309.5

200. The reason helium has never been recovered economically other than from natural fuel gas is its low con-

centration in the atmosphere, namely, 5 parts per million (0.0005 percent of the atmosphere). Extraction by this method requires that a relatively large volume of air be processed to recover a relatively small volume of helium. Thus, in order to extract 1 b.c.f. of helium from the atmosphere, approximately 26,000 megawatts of energy would be required. This amounts to about one-tenth of the entire United States power capacity in 1972. Using present fossil fuel generating plants, this would produce 670,000 lbs/hr of air pollutants and would increase thermal pollution by 4 trillion B.t.u.'s per day to produce 1 b.c.f. of helium.

201. The cost to extract helium alone from the atmosphere would run between \$1000 and \$3000 per m.c.f. of helium extracted. Although present oxygen extraction plants could be converted to also extract helium, this method would also cost about \$500 per m.c.f. of helium extracted, and only 475 m.m.c.f. would be anticipated to be produced annually by the year 2000, even if oxygen demand were to increase dramatically between now and then. For these reasons, Interior does not consider atmospheric extraction of helium as an alternative resource.

202. It is anticipated that our rich, proven, depleting reserves of helium in natural gas will be essentially gone by about 1990, and that the lean, probable, depleting reserves will be essentially gone by about 1995. Most of the natural gas which is today being processed for fuel is expected to be gone by the end of the century. Beyond 1995, aside from shut-in and conservation storage under this program, substantial amounts of helium from lean natural gas sources are considered to be only "possible" or "speculative."

203. Between 1995 and the year 2000, helium from future discoveries, overwhelmingly in the "possible" and "speculative" categories, is forecast to be available at about 15 b.c.f. of helium annually. From 2000 to the year 2030 helium from future discoveries, overwhelmingly in



the "speculative" category, is forecast to drop to an annual availability of about 4 b.c.f., with complete depletion soon thereafter.

204. Helium from these future "possible" or "speculative" lean streams could be produced by the Government at a cost (depending on the helium content) of from \$40—\$70 per m.c.f. to \$175—\$200 per m.c.f. The greater amount would be in the latter range.

205. It is technologically possible to recover helium from natural gas with helium content as low as 0.05 percent.

206. Interior anticipates that the Keyes and West Panhandle fields will be depleted by 1985, thereby substantially reducing the annual availability of helium from fuel gas in 1986 and thereafter. For this reason, helium available from presently proven depleting fuel sources, assuming that all the contained helium was extracted and conserved therefrom, would not after 1985 be able to meet even the annual low demand projected by SRI in 1971, nor the median or high annual demands predicted by Interior in 1970. Subsequent to 1990, even the lowest projection by Interior could not be met from these sources. These estimates are, moreover, based only on presently known uses of helium.

207. Since 1961, an average of 8.4 b.c.f. of helium has annually flowed from proven helium reservoirs, along with the natural gas being withdrawn for fuel purposes. However, only approximately 4.5 b.c.f. of this helium was annually extracted for use or storage, the balance being wasted into the atmosphere as it accompanied the natural gas to the fuel consumer. This usage or wastage has not been offset by discovery of large new natural helium resources.

208. The prospect of discovering a helium reserve in the future as large as that contained in the Hugoton-Panhandle fields is poor. These fields, which supply the gas for the conservation contracts, are the largest helium reserves

known to exist in the world. Natural gas reserves are a finite quantity and will be exhausted. There is a current crisis in natural gas supply.

209. Interior has conducted a helium survey program since 1917, analyzing almost 13,000 samples of gases from wells, fields and pipelines throughout the United States. From 1961 through 1970, with the exception of 1965, no significant helium resources were found. Thus, as Interior annually reported to Congress during these years (in accordance with the 1960 Helium Act), the helium reserves of the United States have progressively declined. The annual reports for 1971 and 1972 also failed to indicate any new discoveries of significant amounts of helium.

210. In 1961, the Tip Top field was discovered in a mountainous part of Wyoming but was plugged and abandoned because of the low heating value of its natural gas. In 1965 Interior completed its analysis of the helium content of the field. Interior estimates it contains about 3 of the 10.3 b.c.f. of proved helium-rich reserves in shut-in fields; and about 12.4 of the 16.8 b.c.f. of "probable" helium-rich shut-in reserves which it has evaluated. These estimates are speculative. For example, the recoverable reserve of helium-bearing gas in the Rattlesnake field on the Navajo Indian Reservation was variously estimated at 12.4, 47.3 and 17 b.c.f., but it actually produced about 1.2 b.c.f.

211. Only one exploratory well has been drilled in the helium-bearing region of the Tip Top field, and that was by the Mobil Oil Company in 1961 at a cost of about \$800,000. Four to six such wells would be necessary to prove the field, as Interior advised Congress in 1969. For this reason, Interior cannot presently determine whether or not the approximately 3 b.c.f. of helium which it categorizes as "proven" at Tip Top can actually be produced. Former Under Secretary of Interior Russell did not consider the field as proven, nor as a large reserve. The estimated "proved" helium reserve at Tip Top is less than

3 percent of the total United States reserves, and less than the amount which was being conserved annually under this conservation program.

212. Interior estimated in 1967 that the cost of producing helium from the Tip Top field by the Government would then be \$10.83 and \$18.79 per m.c.f. The mountainous terrain at Tip Top and its remoteness from storage, transportation, purification and liquefaction facilities, make it difficult to estimate what it would cost to market or store helium from Tip Top.

213. The balance of the shut-in helium-rich reserves (approximately 7.3 b.c.f. estimated and classified by Interior as proved, and 4.4 b.c.f. estimated and classified as probable) are contained in about 40 fields located in various parts of Montana, Wyoming, Utah, Colorado, Kansas, Arizona, New Mexico, Oklahoma, Texas and West Virginia. Very few of these are located near existing extraction, purification or storage facilities, and no estimate has been made of the cost of extracting helium therefrom, nor is it known whether they will be used as fuel gas, thus dissipating any helium contained therein. No estimate has been made of the cost of transporting gas from scattered points to a common gathering point where efficient extraction facilities can be constructed, such as exist at Bushton.

214. Although a shut-in well may have been plugged and abandoned, *i.e.*, filled with concrete, it is still possible for the gas in the well to have escaped since it was plugged.

215. In estimating the reserves in shut-in fields, Interior has only estimated the amount of helium in the field, not the cost of extraction nor the amount of helium which could in fact be extracted.

216. Some of the shut-in helium-rich wells were tapped and sampled by Interior prior to 1960, when the 1960 Helium Act was being considered by Congress. It was estimated, for example, in 1960 that the Pinta Dome area of

New Mexico contained 1.5 b.c.f. of helium, an amount not then considered significant in relation to the proposed conservation program. It is currently estimated that only 23 m.m.c.f. are available at Pinta Dome.

217. As of January 1, 1971, Interior had approximately 38.8 b.c.f. of helium in storage or under its control. 27.7 b.c.f. had already been stored, 3 b.c.f. was estimated as native to the Cliffside storage field, 7.3 b.c.f. was expected from Government-owned helium plants, and 0.8 b.c.f. was expected to be delivered by the conservation contractors, including plaintiff, between January 1, 1971, and the end of March 1971, when termination was supposed to have taken effect. By February 1973, approximately 44.5 b.c.f. of helium was in Interior's control or in storage. None of the helium stored by Interior has yet been used.

218. The estimate of future helium availability made by Under Secretary Russell, in connection with this termination notice, was based upon a September 1969 Interior report. No new evaluations of future helium availability existed between December 31, 1970, and January 26, 1971. There were no significant discoveries of helium reserves in the 6 months prior to January 1971. No pertinent data was provided to Mr. Russell in January 1971 that was not available to him on December 31, 1970.

*The Termination Test Based on  
"Any Other Circumstance of Similar Nature"*

219. Prior to the 1960 Helium Act, helium had not been recovered from gas streams containing less than 0.9 percent helium. Since 1960, helium has been extracted by these helium conservation contractors from gas containing 0.4 percent helium.

220. Helix agreed to and did extend the technology and the state of the art so as to permit the economical recovery of 90 percent of the helium from streams containing 0.46 percent helium. Other advances in technology which were



achieved by plaintiff and the other helium contractors in the performance of their contracts, and at their sole risk, were the development of very large-scale processing facilities and the development of more efficient heat exchangers, making it economically possible to extract helium from these lower-helium content sources.

221. Under Secretary Russell relied in part on these improvements in technology making possible recovery of helium from leaner sources as "the discovery of large new natural helium resources" warranting termination of the contract. He also relied in part upon a July 1969 report by the Bureau of Mines which indicated that high operating efficiencies and economies could be achieved in processing gases with helium content under 0.3 percent, based upon the processes and plants actually developed by the helium conservation contractors, and as contemplated by the bureau's engineers when the contracts were being negotiated.

222. Were a new helium plant to be built by the Government today, it would employ essentially the same technology as that developed in the construction and operation of plaintiff's helium plant.

223. When plaintiff's contract was being negotiated, the Government wanted plaintiff to prove that their advanced technology could in actuality extract helium economically from lower helium content natural gas streams. The Government did not intend that the contract would be terminated should plaintiff achieve a result contemplated by the contract. From the inception of the contract through late 1970, Interior did not consider the development of this technology by plaintiff as a basis for termination of plaintiff's contract.

*Compliance With the National Environmental Policy Act as a Condition Precedent to Termination*

224. The National Environmental Policy Act of 1970 (42 U.S.C. § 4321, *et seq.*) required the Secretary of the

Interior to consider the environmental consequences of the proposed termination action, and section 4332 required Interior to file an environmental impact statement prior to taking action to terminate the helium conservation contracts.

225. Under Secretary Russell had neither considered the environmental consequences of his termination action, nor filed an environmental impact statement dealing with the termination when he issued the termination letters of January 26, 1971. On March 27, 1971, one day prior to the date the termination was stated by Mr. Russell to become effective, the U.S. District Court for the District of Kansas, in *National Helium Corp. v. Morton*, 326 F. Supp. 151, a suit brought by the three other helium conservation contractors, temporarily enjoined Interior from terminating their contracts on the grounds that Interior had not complied with the act ("NEPA"), and had not filed the necessary statement required by the act. The injunction was sustained on appeal, the court stating:

\* \* \* It is undeniable that the Act compels the Department to comply with its provisions when action is being taken having to do with a depletable resource. Here also there is evidence of "new and expanding technological advances" directly related to the need for an application of this resource.

It is undisputed that the Secretary has not considered the environmental impact and has not taken any steps to fulfill the requirements of the NEPA. Indeed the Secretary has not even followed the regulations of his own Interior Department purporting to implement the statute. \* \* \*

\* \* \* \* \*

Having concluded that the court had jurisdiction in this cause and that the NEPA fully applies to the action here involved, it follows that the District Court

acted properly in enjoining the termination program, at least pending the compliance by the Secretary with the NEPA. [455 F.2d 650, 656-57 (10th Cir. 1971).]

226. Interior thereafter filed an environmental impact statement on November 13, 1972. It purported to cover the environmental impact of terminating the other three conservation contracts, but not the one which is the subject of this suit for breach of contract. No environmental statement addressed to this contract has ever been issued.

227. The statement issued with respect to the other three contracts was held to be inadequate on June 11, 1973, by the U.S. District Court for the District of Kansas. On appeal it was found to be adequate by the 10th Circuit, October 19, 1973 (486 F.2d 995). That court directed the district court to dissolve the injunction affecting the other three contractors. (486 F.2d at 1005.)

#### *The Second Termination Notice*

228. When Interior filed its environmental impact statement in November 1972, the five specific Federal agencies whose requirements had been relied upon to support the purported Russell termination, were provided an opportunity to revise their estimates of future requirements. The greatest change occurred in NASA requirements. On July 12, 1972, NASA advised Interior that on the basis of a detailed evaluation it anticipated its annual usage would climb from the then 76 m.m.c.f. to about 95 m.m.c.f. by 1990. NASA stated that it had no basis for determining its needs for the 1990's but speculated they would not exceed 150 m.m.c.f. annually during that period. Two months earlier NASA had reported to Interior that it expected lower consumption than it had anticipated in 1969, but that it had "no basis for a meaningful, quantitative estimate of [its] long-range helium requirements." The adjusted usage estimate in November 1972, included in Interior's impact statement, was:

Time Period	<i>ANNUAL requirements (m.m.c.f.)</i>					
	NASA	DOD	AEC	WB	NBS	Total
1972	76	60	43	9.5	0.6	189.1
1973-1975	84	60	43	9.5	0.6	197.1
1976-1980	63	60	44	9.0	0.6	176.6
1981-1985	79	76	44	8.0	0.6	207.6
1986-1990	95	76	45	7.0	0.6	223.6
1991-1995	150	71	45	5.0	0.6	271.6
1996-2000	150	71	46	4.0	0.6	271.6
Total	3,013	2,130	1,305	222.0	40.0	6,710.0

(All totals may not add as some agencies gave average annual use and a total use figure for the 1972-2000 period.)

229. In response to Interior's draft environmental impact statement, as a condition precedent to termination of the helium purchase contracts, Interior's Bonneville Power Administration (which was not one of the five Federal using agencies) advised the Director of the Bureau of Mines by letter of July 6, 1972, that it projected 5 b.c.f. of helium would be required annually for electrical power use alone by the year 2000.

230. By letter of February 2, 1973, Secretary of Interior Morton again notified Cities Service Helix, Inc., National Helium Corporation and the Phillips Petroleum Company, the three conservation contractors who had procured an injunction, that their helium contracts were terminated, effective at 8 am., c.s.t., 60 days later (hereinafter the "Morton termination"). The notice did not state that it was intended to terminate plaintiff's contract nor did it purport to do so. Attached to the termination letter was a statement containing an evaluation of the environmental consequences of the termination of the three contracts, and the contractual reasons on which termination was predicated.



231. Secretary Morton stated that these other three contracts were being terminated pursuant to their respective contract paragraphs 12.1, provisions which were identical in material respects to paragraph 12.1 of plaintiff's contract. Once again the grounds stated were essentially assertions of a substantial diminution in helium requirements, the discovery of large new natural helium resources, and the ability to economically recover helium from lean gas. He asserted, as had the purported Russell termination, that the purposes of the 1960 Helium Act were to provide for "essential Government activities," purposes which he concluded would not be frustrated by termination of these contracts.

232. With respect to the grounds based on a substantial diminution in helium requirements, Secretary Morton relied on actual, current usage figures by the five specific Government agencies, and asserted that they had increased from 355 m.m.c.f. in fiscal year 1960 to 684 m.m.c.f. in fiscal year 1966, then decreased to 280 m.m.c.f. in fiscal year 1972. Unlike the Russell termination notice, these figures included not only sales by the bureau to Government agencies, but also a rough estimate of the amount of helium which might have been procured from private producers.

233. The Secretary also asserted that the revised projections of future use by the five helium using agencies showed a drop from an estimated need of 46.5 b.c.f. from 1972 to the year 2000, to an estimated need of 6.7 b.c.f. for that period. This usage could, he stated, be met with the estimated 44.5 b.c.f. of helium Interior then had either stored or within its control. He dismissed all estimates of need beyond the year 2000 as conjectural, and beyond the purposes of the helium legislation.

234. Although he denied that the purposes of the helium legislation were to provide for other than those five agencies, he also analyzed the total domestic helium demand, excluding exports, and asserted a diminution in that de-

mand as well. His figures showed an increase from 415 m.m.c.f. in fiscal year 1960 to 897 m.m.c.f. in fiscal year 1967, then a decrease to 440 m.m.c.f. in fiscal year 1972. However, at trial it was shown that charting these estimates on a calendar year basis would have indicated an increase from 441 m.m.c.f. in calendar year 1971 to 475 m.m.c.f. in calendar year 1972. In any event, comparing his figures with Interior's 1959 projections as presented to Congress, he showed demand falling substantially short of projections from fiscal year 1963 through fiscal year 1972.

235. Secretary Morton also pointed to the 1969 Interior projections of future need, and the SRI 1969 and 1971 forecasts, contending that Interior's 1969 low estimate of 33 b.c.f. from 1972 through the year 2000 was more reliable than either the high 69 b.c.f. or median 51 b.c.f. Interior estimates, or the 87 b.c.f., 76 b.c.f. or 68 b.c.f. estimates of SRI, or even Interior's 1959 projection of 55 b.c.f. for this period. He argued that only the Interior's 1969 low estimate (33 b.c.f.) took into account diminished use of helium in the space program.

236. With respect to the termination grounds based on the discovery of large new natural helium resources, the only addition Secretary Morton made to those alleged in the prior Russell termination notice was the discovery of another 2.3 b.c.f. of proved shut-in rich reserves, but he revised the total probable shut-in rich reserves down to 17 b.c.f. as of January 1971.

237. As had the Russell termination statement, Secretary Morton cited 218.9 b.c.f. of possible helium reserves, and 309.5 b.c.f. of speculative reserves, which he asserted were now capable of economical extraction due to the improved technology developed by plaintiff and the other conservation contractors as previously described.

238. Both the Russell and Morton terminations were issued after this litigation had been initiated on December

24, 1970. Both were prepared within the office of the Solicitor of Interior.

239. When the Morton termination statement was issued, Interior could, at best, only roughly estimate what amount of helium was being used by the five Government agencies, their contractors and subcontractors, and what amount was being used otherwise. Interior was not able to identify with any degree of specificity the amount of helium sold by private producers (including the other conservation contractors) to Government contractors and subcontractors. Its estimate of Government usage was based upon analysis of its own records, and talks with some Government contractors and agencies. Similarly, in estimating total domestic demand, Interior arrived at its figures by asking private producers what amounts they produced, and by assuming a very limited storage capacity.

240. Secretary Morton's determination of a substantial diminution in future need was based largely upon statistics he regarded as indicating a drop in demand for helium during the immediately preceding few years. However, it was Interior's position, in response to criticism of the program from OMB in March of 1970, and from the GAO in September 1969, that short-term changes in demand cannot reliably be used to predict the long-term future need contemplated by the act. As in the case of the Russell termination statement, the Morton termination statement does not give consideration to national helium requirements past the year 2000.

241. Even on the assumption that the "substantial diminution in helium requirements" test is addressed solely to the needs of the five specified Government agencies, a determination cannot be made that these essential Government activities will have an assured supply of helium in the future. When the test is addressed to national needs, including the present and future needs for ample supplies of clean energy, industrial activities, transporta-

tion, scientific and technological activities, it is obvious that essential Government activities are further adversely affected since Government activities are interrelated with industrial activities.

242. On June 6, 1974, the following bill (H.R. 15252, 93d Cong., 2d Sess.) was introduced in the House of Representatives and referred to the Committee on Interior and Insular Affairs:

#### A BILL

To authorize and direct the Secretary of the Interior to conserve and store helium.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Helium Storage Act of 1974".*

SEC. 2. The Congress declares that helium is a wasting national asset and its depletion to the atmosphere is not in keeping with the national interest of conserving our natural resources, and in order to promote the general welfare and provide for the national security, it is the policy of the Federal Government to provide for the conservation and storage of helium to meet existing and potential future requirements.

SEC. 3. For the purpose of conserving and storing helium extracted from natural gas, the Secretary of the Interior shall, so long as non-Federal helium extraction facilities are in operation, at the election of such non-Federal facilities and without storage expense, accept, collect, receive, and store crude helium in the existing Federal helium pipeline and storage system, and conserve, hold, and store the same in the existing Federal underground storage facility.

SEC. 4. The provisions of section 3 of this Act shall impose no additional requirement on the Federal Gov-



ernment to expand the existing Federal helium pipeline and

SEC. 5. The Secretary of the Interior shall at no expense to the non-Federal helium extraction facility re-deliver, upon demand, not more than 92 per centum of the helium received at a rate not greater than the volume rate at collection so long as the Federal Government operates and maintains the existing Federal pipeline and storage system.

SEC. 6. There are authorized to be appropriated such sums as necessary to carry out the purpose of this Act.

*Computation of Damages for  
Breach of Contract at Common Law*

243. The ability of plaintiff to extract and tender helium to the Government through the remainder of the contract period ending August 15, 1983, has been stipulated. The parties have stipulated that if plaintiff's contract had remained in effect during the period December 24, 1970, through August 15, 1983, it would have delivered to the United States 6.467 b.c.f. of contained helium. The quantity of such contained helium which would have been delivered each year is as follows:

	Contained Helium (cubic feet)
12/24-12/31/70	14,900,000
1971	599,600,000
1972	614,100,000
1973	590,600,000
1974	569,700,000
1975	548,800,000
1976	525,800,000
1977	506,500,000

1978	487,200,000
1979	468,900,000
1980	450,600,000
1981	430,800,000
1982	410,900,000
1/1-8/15/83	248,600,000
	6,467,000,000

244. At the contract price of \$12.41 per m.c.f. in effect on December 24, 1970, the contract price for the 6.467 b.c.f. of helium that Helex would have delivered during the period December 24, 1970, through August 15, 1983, is \$80,255,000 (without adjustment for the wholesale price index as required by the contract), in the following annual amounts:

Year	Contract Price
1970	\$ 185,000
1971	7,441,000
1972	7,621,000
1973	7,329,000
1974	7,070,000
1975	6,811,000
1976	6,525,000
1977	6,286,000
1978	6,046,000
1979	5,819,000
1980	5,592,000
1981	5,346,000
1982	5,099,000
1983	3,085,000
	\$ 80,255,000

245. Article 7.3(b) of the contract provided for a periodic adjustment in the contract price, geared to the wholesale price index, in these terms:

7.3 For the purposes of unit price adjustments provided for in this paragraph 7.3 the initial unit price of eleven dollars and twenty-four cents (\$11.24) is considered to consist of two parts, which are described below, each of which shall be adjusted in the following manner, and the unit price payable hereunder shall be adjusted accordingly, to wit:

\* \* \*

(b) Part 2 of the initial unit price shall be ten dollars and seventy-seven cents (\$10.77). This amount represents the major portion of the initial unit price and is equal to the initial price less the amount specified in the preceding subparagraph (a) which shall be adjusted separately. This part of the initial unit price shall be adjusted at the beginning of the second contract year and at the beginning of each contract year thereafter. This part of the initial unit price shall be increased three-fourths of one cent (\$0.0075) for each one-tenth (0.1) point of increase in the wholesale price index for all commodities exclusive of farm products and food above a base wholesale price index as hereinafter defined or decreased three-fourths of one cent (\$0.0075) for each one-tenth (0.1) point of decrease in the wholesale price index for all commodities exclusive of farm products and food below the base wholesale price index. The base wholesale price index as used herein shall be one hundred and twenty-eight and three tenths (128.3) which is the arithmetical average of the monthly wholesale price indexes for all commodities other than farm products and food for the 1960 calendar year, as published by the Bureau of Labor Statistics, United States Department of Labor, relative to the base period 1947-1949. The wholesale price index used in each adjustment shall be the arithmetical average of the monthly wholesale price indexes relative to the base period 1947-1949 for all commodities other than farm products and

food for twelve (12) calendar months, April through March, preceding the contract year for which adjustment is made; and in the event that this index is published by the Bureau of Labor Statistics relative to a base period other than 1947-1949, the wholesale price index used in each adjustment period shall be the arithmetical average of the monthly wholesale price indexes for all commodities other than farm products and food for the twelve (12) calendar months described above as related to the 1947-1949 period. If for any reason and at any time it should become impossible or impracticable to determine the adjustment in this part of the initial unit price as afore-described, the parties hereto agree that they will mutually determine a different method of accomplishing the adjustment in accordance with the intent of this subparagraph.

246. The parties are in conflict as to what years should be selected as a base period from which to predict or project the probable escalation of the wholesale price index through 1983. Pursuant to the above-quoted article 7.3(b), this determines what the contract price would have been had the contract run to completion. At trial the parties each presented projections of future changes in the wholesale price index. Both used the same method and mathematical techniques. They examined past behavior of the index in order to develop a curve or line based thereon which, extended, would provide projections of future trends. The shape of the curve or line developed depends primarily on two factors, the type of formula employed to fit a trend curve to past or base period experience, and the years selected as a base period to which to fit the trend curve.

247. The Government contends that the base period should be 1947-1971, from which the 1971-1983 wholesale price indexes should be extrapolated. No specific reason is given for the choice of 1947 as the point of beginning. It is



speculated that 1947 was chosen because it provides a 25-year period prior to the 1971 "termination," and 25 years is considered one convenient base period. The Government urged that the 1947-1971 period should be used as a base on the assumption that the average rate of increase from 1971-1982 would be the same as the rate of increase during the 25-year period just prior thereto.

248. The plaintiff introduced three distinct bases. Alternate A is based on the period 1947-1959; Alternate B on the period 1967-1971. Plaintiff urges that the years 1960-1966 should not be embraced in a base period from which to extrapolate because it was an unusual and untypical period of economic "stagnation" in which the wholesale price index remained virtually unchanged. Therefore it is rejected as not representative of what is likely to occur in the next 10 years. Alternative B is urged as the more realistic period. The only reference to 1947 as a start that appears (although not suggested by the parties) is that article 7.3(b) of the contract, the escalation clause, calls for use of wholesale price indexes to be relative to the wholesale price index of 1947-1949, *i.e.*, taking the index for 1947-1949 as 100, the index for 1960, when this contract was negotiated, was set at 128.3 relative to the 1947-1949 period. This was done because the increases were tied to increases in the Department of Labor, Bureau of Labor Statistics, indexes which were at that time computed relative to the 1947-1949 period.

249. The reason why plaintiff also selected 1947 as the starting year of its Alternate A is not apparent either.

250. In addition to plaintiff's Alternates A and B, it presented a third Alternate C which assumed 1941 as the point of beginning, and extended to 1971 without exclusions. From this base period of 31 years, wholesale price indexes were extrapolated and the related contract prices calculated for the years 1970-1983.

251. Plaintiff did not urge this base period until the very end of the trial. In fact, the exhibits presenting it were the very last pieces of evidence offered by plaintiff as part of "additional" evidence presented after close of the main part of the trial. They were admitted without objection by defendant. Only one allusion to the use of 1941-1971 as a base period was made prior to the end of the trial itself. During cross-examination of Miss Stapleton, the Government's economist, plaintiff's attorney asked the witness what the effect would be if the period 1941-1971 was used. When the witness answered that she had no idea and would have to compute it, plaintiff's attorney did not pursue the matter.

252. No reason was given for using 1941 as a start until the proposed findings were submitted. There plaintiff urged 1941 as the beginning of the 1941-1960 period used in 1961, in the course of negotiation of this contract by the Government's chief negotiator, Mr. Wheeler, to anticipate the maximum amount of money the Government would be liable for in any year under the article 7.3(b) escalation clause.

253. On September 19, 1961, slightly over a month after this contract was signed, Mr. Wheeler described the price features of the contract in a memo to the files. He noted that the contract required the Government to pay up to \$9,500,000 a year under the contract. He also noted that the \$9,500,000 figure was developed from the probable contract price increases which were projected from the 1941-1960 history of the wholesale price index.

254. The contract price per year for the amounts of helium that would have been delivered by plaintiff if its contract had remained in effect during the period December 24, 1970, through August 15, 1983, adjusted in accordance with article 7.3(b), and using a wholesale price projection with a 1941-1971 base period (Alternate C) is as follows:

## Contract Price (in thousands)

Year	At \$12.41/m.c.f	WPI Adj.	% Increase	Total Contract Price
1970	\$ 185	\$ —	0.00	\$ 185
1971	7,441	128	1.72	7,569
1972	7,621	536	7.03	8,157
1973	7,329	887	12.12	8,216
1974	7,070	1,038	14.68	8,108
1975	6,811	1,174	17.24	7,985
1976	6,525	1,298	19.89	7,823
1977	6,286	1,423	22.64	7,709
1978	6,046	1,538	25.44	7,584
1979	5,819	1,647	28.30	7,466
1980	5,592	1,747	31.24	7,339
1981	5,346	1,833	34.29	7,179
1982	5,099	1,907	37.40	7,006
1983	3,085	1,214	39.35	4,299
Total	\$ 80,255	\$ 16,370		\$ 96,625

255. In making the above computation in August 1973, plaintiff employed a wholesale price index figure of 164.1 for calendar 1973. The actual rise in the wholesale price index for 1973, as shown by Bureau of Labor Statistics, was 170.9. Judicial notice can also be taken of the fact that inflationary pressures have exceeded normal projections in 1974.

*Reduction of Damages  
to Take Account of Present Value*

256. Defendant raises the issue that the amount claimed by plaintiff must, if allowed, be reduced to take account of present value. Plaintiff, while not contesting the reasonableness of the basic concept that the present payment of amounts due over a period in the future confers an eco-

nomie benefit, contests its application in this case. It urges that the basic concept is offset by the interest on past due payments which it cannot recover, the costs of litigation and the immediate recapture by the Government of about 50 percent of a present payment in taxes.

257. Findings on any reduction, to take account of present value based on defendant's theory, must be predicated on certain assumptions for ease of calculation. Amounts which would have been received monthly throughout each listed year had the contract run to completion are assumed to have been paid in total in mid-year. A payment of judgment is assumed in mid-1974. Hence, the present value of sums to be received in the middle of each year subsequent to 1974 are calculated relative to mid-1974. Therefore, there is no present value discount for the years 1970 through 1974.

258. A 6 percent discount rate is assumed because it is reasonable in light of current interest rates on safe long-term investments and because it is impliedly acquiesced in by plaintiff, although plaintiff is opposed to any reduction at all for present value, for the reasons above-stated.

259. With these assumptions, the remaining contract price (escalated in accordance with the wholesale price index as provided by the contract) is reduced from \$96,625,000 to \$81,677,725 as follows:



Year	Escalated Contract Price	Number of Years Discount	Discount Factor at 6 percent	Present Value
1970	\$ 185,000	0	1.0	\$ 185,000
1971	7,569,000	0	1.0	7,569,000
1972	8,157,000	0	1.0	8,157,000
1973	8,216,000	0	1.0	8,216,000
1974	8,108,000	0	1.0	8,108,000
1975	7,985,000	1	0.94339623	7,533,019
1976	7,823,000	2	0.88999644	6,962,442
1977	7,709,000	3	0.83961928	6,472,625
1978	7,584,000	4	0.79209366	6,007,238
1979	7,466,000	5	0.74725817	5,579,029
1980	7,339,000	6	0.70496054	5,173,705
1981	7,179,000	7	0.66505711	4,774,445
1982	7,006,000	8	0.62741237	4,395,651
1983	4,299,000	9	0.59189846	2,544,571

Total \$81,677,725

260. The imponderables present in both the issue of applying the wholesale price index to the contract price in accordance with article 7.3(b), and in the issue raised by defendant of applying a discount factor for present value, are eliminated if any judgment is made payable in installments corresponding in amount to the installments which would have been payable under the payment clause of the contract had the contract continued in effect. Since defendant controls the valve by which helium is supplied to defendant's pipeline and storage system, and since plaintiff has continued to tender helium at the valve, this represents a method of avoiding difficult and imprecise quantum issues relating to judgment without in any way suggesting a continuation of a contract, which has been adjudged at an end.

### *Additional Efforts to Mitigate*

261. Since December 24, 1970 (the date this suit was filed), plaintiff has negotiated with the major helium marketers in the United States for the sale of helium produced by it but without success. It has negotiated with foreign firms and employed consultants to study foreign markets to determine whether a market existed for the helium it was producing.

262. Plaintiff was able to make only one sale, which was to Kansas Refined Helium at Otis, Kansas. The helium is transported by truck to the purchaser. The amount of helium sold or to be sold under this contract, the costs of transportation incurred or to be incurred by plaintiff, and the gross and net revenue from the sales are as follows:

Year	Volume (m.c.f.)	Transportation	Gross Revenue
1971	2,351	\$ 800	\$ 22,335
1972	54,964	46,598	522,370
1973	60,000	105,288	570,000
1974	70,000	122,836	665,000
1975	80,000	140,384	760,000
1976	35,036	61,481	332,842
Totals	302,351	\$477,387	\$2,872,547
			477,387
		Net	\$2,395,160

Sales expenses incurred by plaintiff (travel costs) in attempting to sell the helium are as follows:

1971	\$ 4,779
1972	8,253
Total	\$13,032

263. The helium conservation program was intended to, and did, create a helium production capacity which many

times exceeds current demand. One of the other conservation contractors, namely, Cities Service Helix Company, alone has sufficient production capacity to supply substantially all current helium demand. Additional helium is extracted by Interior and by private companies not participating in the conservation program. With the termination of helium conservation for the long-range future, helium which would otherwise have been conserved for the post-1985 market is available for current sale, thus flooding the current market.

264. Helium sold by plaintiff to Interior was by contract definition "crude" helium, that is, 80 percent helium and 20 percent nitrogen. To be sold commercially, helium should have a purity of 99.999 percent. Commercial helium is also, for the most part, liquefied to facilitate its transportation. Neither Northern nor Helix nor any other of Northern's subsidiaries owns helium purification or liquefaction facilities although some of plaintiff's competitors own such facilities as well as marketing facilities. The capital expenditures necessary for Helix to construct purification, liquefaction and marketing facilities cannot be justified on the basis of a potential recovery of such costs through revenues in today's market.

265. Long-range conservation and storage by the development of independent private storage facilities by plaintiff would not be economically feasible either.

Interior's Cliffside storage field is the only major helium storage area in the United States (*see* finding 5 *supra*). Plaintiff has no facilities available to it in which extracted helium could be stored, and a preliminary survey by plaintiff has disclosed no storage areas that would be available to it as an alternative to Cliffside. Plaintiff stored 832 m.m.c.f. of helium produced by it between December 24, 1970, and September 28, 1972, in the Cliffside field under the earlier-mentioned interim "no prejudice" storage arrangements with Interior, but it incurred storage ex-

penses in that short period under that agreement (excluding \$25,758 applicable to volumes sold by plaintiff to a private purchaser), as follows:

1971	\$180,628
1972	321,917
Total	<u>\$502,545</u>

266. Interior refused to continue storing helium after September 28, 1972, in the absence of an agreement by plaintiff to the terms of storage offered by Interior. Coupled with its losses flowing from the termination of the contract, plaintiff found the storage terms offered to be confiscatory. Moreover, the longest term storage agreement offered by Interior was 10 years, whereas a minimum 25-year agreement was necessary to assure that the helium could be stored until it could reasonably be expected to be sold as helium conserved for the long-range future. Therefore, since the time that Interior shut the valve in its pipeline to the Cliffside storage field (September 28, 1972), plaintiff has had no choice other than to vent helium, being produced, into the atmosphere. Attempts by plaintiff to convince Interior to store the helium being produced, without prejudice to either party pending the outcome of this litigation, have been unsuccessful. (See findings 5-7.)

267. Storage and payment of storage charges by plaintiff in the Cliffside field would be highly speculative in any event. The transportation and sale of helium is subject to the control of the Secretary of Interior who can acquire it by eminent domain and prevent nonessential or wasteful use. Export of helium is also subject to Federal controls. All Federal needs for helium are to be satisfied from Government-owned helium. Because of the total integration of its facilities, as earlier described, plaintiff has continued to extract helium since December 24, 1970, and has continued to identify it with the contract and to tender it to defendant. All helium produced by plaintiff up to the



date of breach was delivered to the Government under the contract.

*Credits for Payments  
Made for Deliveries Since Suit Filed*

268. On January 14, 1971, the Government paid plaintiff \$8,671,631.99, which covered the period through November 30, 1970. On June 18, 1971, defendant sent plaintiff a check for \$2,285,872.87 which defendant stated was \$232,557.68 less than plaintiff was due for the period December 1, 1970, through March 28, 1971. The difference was explained in the letter accompanying the check, as follows:

The \$232,557.68 represents \$32,557.68 due to the Government under contract 14-09-0060-3085 for the storage of helium March 28-April 30, 1971, and \$200,000 which approximates the sum for which the Government has asserted a counterclaim in *Northern Helix Company v. United States* in the Court of Claims.

269. The \$2,285,872.87 was composed of \$532,431 for the period December 1, 1970, through 8 a.m., December 25, 1970, and \$1,753,442 for the period from 8 a.m., December 25, 1970, through March 28, 1971. Adding the \$32,557.68 which the defendant withheld for separate storage expenses, defendant has paid \$1,786,000 for helium delivered subsequent to the breach. The \$200,000 which defendant withheld for its counterclaim (which has been severed from this action) has not been included in this amount.

*Plaintiff's Costs of Performance  
for Remainder of Contract Term*

270. Determination of plaintiff's remaining costs of performance of the contract (as distinguished from the remaining contract price) is irrelevant to the theory of plaintiff's claim, which is predicated upon total integration

of its facilities, precluding discontinuance of operation of the helium extraction facility. Nevertheless, the following findings are made on the remaining cost of performance.

271. Had the contract remained in effect during the period December 24, 1970, through August 15, 1983, the parties agree that plaintiff would have incurred the following costs of performance, excluding consideration of a potential liability for the landowners'/producers' claims, adjustments for inflation, and interest on monies borrowed or to be borrowed by plaintiff. Costs escalated at the same rate as the contract price (*i.e.*, in accordance with the wholesale price index) are shown in column 3 below as "Escalated Costs":

Year	Costs	Escalated Costs
1970	\$ 81,035	\$ 81,035
1971	3,910,829	3,978,103
1972	3,869,331	4,141,468
1973	3,824,175	4,287,000
1974	3,779,953	4,334,916
1975	3,735,730	4,379,651
1976	3,690,754	4,424,945
1977	3,647,106	4,472,723
1978	3,603,457	4,520,115
1979	3,320,515	4,260,348
1980	2,725,613	3,577,123
1981	2,630,801	3,532,832
1982	2,623,658	3,604,893
1983	1,624,456	2,263,707
Total	\$ 43,067,413	\$ 51,858,859

272. The above-referenced landowners'/producers' claims are claims against plaintiff by owners of the natural gas producing lands, and well-owner producers who claim the value of the helium contained in the natural gas from their

lands and wells. In *Northern Natural Gas Co. v. Grounds*, 441 F.2d 704 (10th Cir. 1971), *cert. denied*, 404 U.S. 1063 (1972), the court decided that the producers were due the reasonable value of the helium by the helium companies, and that the landowners were in turn due royalties from the producers. By stipulation of October 19, 1973, reimbursement of plaintiff for these contingent liabilities, as provided for in article 7.4 of this contract, is not here in issue.

### *The Profit Factor*

273. As heretofore found, the contract price was negotiated in an arm's length transaction with experience favoring defendant as the sole producer of helium up to that time. The price reached was in line with the Government's prior net cost of production (without profit), and was also in line with prices thereafter negotiated with the other three helium conservation contractors. Nevertheless, the following findings are made with respect to the issue, raised by defendant, that recovery of the contract price results in an unconscionable profit.

274. An audit of plaintiff's financial records by defendant shows that between January 1, 1971, and August 15, 1983, plaintiff's average annual net plant investment, taking depreciation into account (*i.e.*, book value), with an estimated \$500,000 for estimated annual working capital, would be an estimated \$3,051,000. Assuming that the initial 57 percent/43 percent debt to equity ratio proposed in Northern's August 4, 1961, internal report (produced in response to defendant's motion), was to be the average ratio in effect for these years, the average annual debt for this period would be \$1,739,000 which, at 5 percent interest, would equal approximately \$87,000 in interest. Adjusting this for the period of time from December 24, 1970, to August 15, 1983 (12.64 years), yields estimated remaining interest due in the amount of \$1,100,000, computed as follows:

In thousands  
of dollars

\$ 1,739 = Estimated average annual debt assuming a 57/43 debt/equity ratio as cited in the August 1961 report.  
 $\times .05$  = Interest rate as cited in the August 1961 report.  
 \$ 87 = Estimated average annual interest payment.  
 $\times 12.64$  = Adjustment for time period 12/24/70-8/15/83.  
 \$\$ 1,100 = Estimated interest at 5 percent from 12/24/70-8/15/83.

275. The estimated profit plaintiff would receive is computed as follows:

In thousands  
of dollars

\$ 80,255 = Estimated revenue, unescalated, for the period 12/24/70-8/15/83; \$12.41 per m.c.f.  
 — 43,067 = Estimated operating expenses, unescalated, for the period 12/24/70-8/15/83; \$6.66 per m.c.f.  
 \$ 37,188 = Estimated net operating profit, before interest and taxes, 12/24/70-8/15/83.  
 — 1,100 = Estimated interest, 12/24/70-8/15/83; \$0.17 per m.c.f.  
 \$ 36,088 = Estimated net operating profit before taxes, 12/24/70-8/15/83.  
 $\div 12.64$  = Adjustment for time period 12/24/70-8/15/83.  
 \$ 2,855 = Estimated annual net operating profit before taxes.  
 $\times .472$  = Estimated income tax factor (52.8 percent tax rate).  
 \$ 1,348 = Estimated annual net operating profit after income tax.



276. If revenues and costs are escalated by the wholesale price index formula stated in the contract, profit is computed as follows:

In thousands  
of dollars

\$ 96,625 = Northern Helex Company's projection of escalated revenue, using 1941-1971 as a basis for projection.  
 — 51,852 = Projection of estimated operating expenses, assuming costs escalated at the same rate as the preceding revenue.  $((\$96,625/80,255) \times 43,067)$   
 \$ 44,773 = Estimated projected net profit before interest and income taxes.  
 — 1,100 = Estimated interest, 12/24/70—8/15/83.  
 \$ 43,673 = Estimated net profit before income taxes.  
 ÷ 12.64 = Adjustment for time period 12/24/70—8/15/83.  
 \$ 3,455 = Estimated annual net operating profit before taxes.  
 × .472 = Estimated income tax factor (52.8 percent tax rate).  
 \$ 1,631 = Estimated annual net operating profit after income taxes.

277. Rate of return, computed on the basis of the total original investment, is as follows:

Amounts in thousands of dollars	Unescalated		Escalated	
	Before Taxes	After Taxes	Before Taxes	After Taxes
Estimated Annual Net Operating Profit	\$ 2,855	\$ 1,348	\$ 3,455	\$ 1,631
Original Investment ÷	\$11,500	\$11,500	\$11,500	\$11,500
Rate of Return	24.8%	11.7%	30.0%	14.2%

### *Recapitulation of Damages for Breach at Common Law*

Amount of helium which would have been delivered under the contract had it remained in effect during the period December 24, 1970, through August 15, 1983, per stipulation 6,467,000,000 c.f. at contract price of \$12.41 per m.c.f. in effect on December 24, 1970 = \$ 80,255,000

Contract price, adjusted in accordance with the wholesale price index (Article 7.3(b) using a wholesale price projection with a 1941-1971 base period) = \$ 96,625,000

At a 6 percent discount rate to account for the present value of monies which plaintiff would have received in future years = \$ 81,677,725

Less sales to Kansas Refined Helium—  
gross \$2,872,547

Less transportation expense 477,387  
\$2,395,160

Less sales expense 13,032  
\$2,382,128 = — 2,382,128  
\$ 79,295,597

Plus storage expense charged plaintiff by defendant for 832,000,000 c.f. produced by plaintiff between December 24, 1970, and September 28, 1972, and stored in the Cliffside field under the interim "no prejudice" storage arrangement with Interior = + 502,545  
\$ 79,798,142

Less payments made for deliveries after suit filed = — 1,786,000  
\$ 78,012,142

## CONCLUSION OF LAW

Upon the foregoing findings of fact and opinion, which are adopted by the court and made a part of the judgment herein, the court concludes as a matter of law that plaintiff is entitled to recover of and from the United States the sum of seventy-eight million, twelve thousand, one hundred forty-two dollars (\$78,012,142), and judgment is entered for plaintiff in that amount.

## IN THE UNITED STATES COURT OF CLAIMS

No. 454-70

(Decided January 21, 1972)

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NORTHERN HELEX COMPANY V. THE  
UNITED STATES

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*Clarence T. Kipps, Jr.*, attorney of record, for plaintiff.  
*David W. Richmond, John L. Rice, Miller & Chevalier, F.V. Roach, Ralph P. Blodgett, Jim W. Krueger*, of counsel.

*Edward J. Friedlander*, with whom was *Assistant Attorney General L. Patrick Gray, III*, for defendant.

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Before COWEN, *Chief Judge*, LARAMORE, *Judge*, DUFEE, *Senior Judge*, DAVIS, COLLINS, SKELTON, and NICHOLS, *Judges*.

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ON PLAINTIFF'S MOTION AND DEFENDANT'S CROSS-MOTION FOR  
SUMMARY JUDGEMENT

DAVIS, *Judge*, delivered the opinion of the court:

This is the preliminary round in an effort by the Northern Helex Company to recover \$83,632,368 allegedly due it as a result of an admitted breach by the Government of a contract to purchase helium. On cross motions for summary judgement, we decide the issues of materiality of the defendant's breach and of claimed waiver by the plaintiff of that default. Only those threshold issues of liability are disposed of today; the critical questions of the validity of the subsequent termination of the contract by the Gov-



ernment and of the recovery of damages by the plaintiff are not before us in any way.

The plaintiff, a wholly owned subsidiary of Northern Natural Gas Company, made a contract with the United States, acting through the Department of Interior, on August 15, 1961. This agreement was authorized by the Helium Act Amendments of 1960 (50 U.S.C. § 167, et seq.), a long-range program designed to conserve helium as a natural resource for future use. A by-product of the production of natural gas, helium was wasted daily as it escaped into the atmosphere at such a rate that the helium-bearing gas resources in the southwestern states were expected to be inadequate for national needs by 1980-1985. Because of the unique properties of helium and the slim likelihood of finding new sources as rich as the Hugoton Area, involved here, the helium conservation program was initiated. One of its components was plaintiff's contract.

This provided for the purchase by the United States of the helium to be produced by Northern Helex which was estimated to be 13.5 billion cubic feet over a span of years. The helium was to be extracted from Hugoton gas, delivered, and paid for each month over the 22-year contract period with an annual fiscal year limitation of \$9.5 million. The unit price of \$11.24 per thousand cubic feet had increased to \$12.41 by the date this action was filed (in December 1970) due to automatic price adjustments envisaged by the agreement. The Government also entered into similar contracts with Cities Services Helex, National Helium Corporation and Phillips Petroleum Company. Pursuant to its contract, Northern Helex constructed facilities, extracted, and delivered helium from December 7, 1962, onward.

The helium conservation program was intended to be self-liquidating, financed with borrowing authority provided by Congress and with funds lent by the Treasury Department to Interior. The borrowed funds were to be supplemented

and, within 25 to 35 years, repaid with interest from helium sales proceeds. Interior was to sell some of the helium at a price high enough to pay for the entire program and still have 40-50 billion cubic feet in storage for use after 1983. The "federal market"—consisting of Government agencies, their prime contractors and subcontractors—was expected to purchase its major helium requirements from Interior and provide the basic financing for the whole program.

Unfortunately this forecast did not prove itself. The difficulty was that, from the mid-1960's, private helium plants began to operate outside the program and to sell to government contractors. Also, other conservation contractors produced helium in excess of the amount which could be sold to Interior under their contracts and sold the excess in competition with Interior at lower prices. Northern Helex sold helium only to Interior, but over the period of 1965-1969, some \$25 million (it is said) was lost to the program because helium was purchased for federal use from other private producers rather than the Bureau of Mines. Congress did not appropriate enough funds to satisfy the payments due under the agreements of Northern Helex and its companions in the program. By letter dated November 26, 1968, Interior informed plaintiff that the Government would be unable to make payments when they became due as of January 1969. Beginning in December 1968, and continuing through 1969 the Government failed to pay the complete amount owed. Arrearages in the monthly payments ranged from a low of \$664,122 to a high of \$3,235,349. For deliveries from November 1969 through November 1970, the Government paid nothing at all.

In May 1970, the Interior Department convened a meeting of the four conservation contractors in which they were told that the unit price and the maximum annual payment would have to be negotiated downward. A letter of June 24, 1970 (acknowledged June 26), from Northern Helex notified the Government that its failure to make payments was a mate-

rial breach which was not being waived, but that Northern Helex was willing to discuss modifications. A draft agreement which would have increased the obligations of plaintiff while the payments to it were decreased was circulated along the lines discussed in the negotiations. Meanwhile, in his request for supplemental appropriations for fiscal year 1971, the President asked only \$56,100,000 in borrowing authority for obligations under the helium contracts. This amount was not sufficient to pay outstanding debts and all anticipated deliveries for the remainder of the fiscal year but only to cover five months of operation at the present contract price and seven months at the reduced price proposed by Interior. No real progress was made during the negotiations, as Northern Helex delivered 657,008,000 cubic feet of helium from November 1, 1969, through November 30, 1970, plus an additional 44,647,000 through December 24, 1970, the date of filing of the petition in this court, without receiving any payment.

In its petition, plaintiff alleged that although its contractual obligation to perform had been discharged by the Government's material breaches of contract, it would continue to tender helium to the Government in mitigation of damages and in the interest of conservation. This was done, according to Northern Helex, because helium extraction facilities have been interrelated with its liquefied petroleum gas and petrochemical operations in such a way that the helium facilities must be continued in operation whether helium is wasted or stored. Northern Helex has no facilities for storage, purification, distribution, or marketing of helium and there is so little demand for the gas in the private market that the company has not considered it financially feasible to develop such facilities. On December 30, 1970, Northern Helex notified Interior of this suit and of its decision to continue to deliver helium, despite the material breach, because of the integration of its facilities and the need to save helium.

On January 14, 1971, the United States sent Northern Helex a check for \$8,671,631.99—the total amount then due for all helium delivered by plaintiff—which the company cashed, without any notation on the check, and it then amended its petition to reflect payment as a reduction of damages. On January 26, 1971, the Under Secretary of Interior wrote plaintiff terminating the contract under its termination clause, effective March 28, 1971. Plaintiff does not acknowledge the legitimacy of this asserted termination. Since then, a “no prejudice agreement” has been entered into under which Interior agrees to store helium which Northern Helex has continued to deliver. Payment also continued. Northern Helex billed Interior for helium delivered through March 31, 1971. The bills carry a legend indicating that delivery, submission of documents, and payment shall be without prejudice to the rights of the parties. After the recent Congressional appropriation of funds, on June 23, 1971 Northern Helex received a check of \$2,285,872.87 for the period of December 1970 through March 28, 1971. This June payment is also considered by Northern Helex to be a reduction of damages without prejudice to its rights.

### *I. The materiality of the breach*

The Government's failure to pay a large amount over an extended period of time was a conceded breach of its contractual obligation. Arrearages in monthly payments which began in December, 1968 and continued through 1969 ranged from \$664,122 to \$3,235,349. For deliveries from November 1, 1969 through November 30, 1970, the Government paid nothing at all. By the time suit was filed in December 1970, \$8,671,632 was owing to the plaintiff.<sup>1</sup> The

<sup>1</sup> More precisely, \$8,119,859 was due for 612,546,000 cubic feet of helium delivered through October, 1970. The remaining \$551,773 was claimed by plaintiff as payment for the November delivery of 44,462,000 cubic feet, but that sum was not due until December 29, five days after suit was filed.



failure of the Government to pay required Northern Helix to borrow funds to continue performance. These loans which were zero at the beginning of 1969 increased steadily to \$7,175,000 by December 31, 1970. Northern Helix claims it was thus damaged at the rate of \$56,000 a month (the interest rate of 8% times \$8,600,000).<sup>2</sup> Unlike Interior's contracts with the three other conservation producers of helium, plaintiff's arrangement did not provide for payment of interest by defendants on amounts due but unpaid.

The Government contends, however, that such delinquency without more does not constitute a total breach warranting the contractor in ending the agreement. Perhaps mere delay in payment, for a while, would not be a material breach but there is a clear distinction between delay of that kind and a total failure to pay over many months. Our jurisprudence strongly suggests that the latter sort of breach by the Government is material, just as it would be in the case of a private party. *Ferris v. United States*, 27 Ct. Cl. 542, 546 (1892); *Pigeon v. United States*, 27 Ct. Cl. 167 (1892); *Overstreet v. United States*, 55 Ct. Cl. 154, 172 (1920); *Suburban Contracting Co. v. United States*, 76 Ct. Cl. 533, 542-43 (1932); *Whitbeck, Receiver v. United States*, 77 Ct. Cl. 309, 335, *cert. denied*, 290 U.S. 671 (1933); *Joplin v. United States*, 89 Ct. Cl. 345, 363 (1939); *Brooklyn & Queens Screen Mfg. Co. v. United States*, 97 Ct. Cl. 532 (1942); *Seatrail Lines, Inc. v. United States*, 99 Ct. Cl. 272, 316 (1943). Nothing in the contract excused or palliated defendant's default. The "Force Majeure" clause (Art. XVI), dealing with inability of a party to carry out its obligations because of force majeure, specifically excepted the obligation to make payments from the leniency allowed by that provision. Nor was this a contract in which the Government's duty to pay was conditioned on receipt of

<sup>2</sup> Whether or not these figures are slightly inflated, as Government counsel suggested in the reply brief and at oral argument, is a consideration which may be relevant to a trial on damages but not to our determination of liability.

appropriations or approval by Congress. *Cf. Congress Constr. Corp. v. United States*, 161 Ct. Cl. 50, 314 F.2d 527, *cert. denied*, 375 U.S. 817 (1963). We have, in short, not the slightest doubt that the prolonged failure to pay large amounts was a material breach of the contract.<sup>3</sup>

## II. Waiver before suit

The Government's primary defense is that, assuming Northern Helix could have elected to claim total breach, it waived that right by continuing performance and by treating the lack of payment as immaterial.

There is, of course, venerable authority that, wherever a contract not already fully performed is continued in spite of a known breach, the wronged party cannot avail himself of that excuse (Williston, *Contracts*, 3rd ed., Vol. 5, § 688). But it is very doubtful that, even when first formulated, that rule disregarded particular circumstances justifying further performance in the specific case. As a general proposition, one side cannot continue after a material breach by the other (such as failure to pay), act as if the contract remains fully in force (although stopping performance would be fair and convenient), run up damages, and then go suddenly to court. In this case, however, we have a special set of qualifying facts. Plaintiff's helium extraction facilities are so interrelated with its liquefied petroleum gas and petrochemical operations that the helium facilities must be continued in operation whether helium is wasted

<sup>3</sup> Intermixing the separate issue of waiver with that of the materiality of the breach, defendant relies on *Pasquel v. Owen*, 186 F.2d 263 (C.A. 8, 1950); *Willard Southerland & Co. v. United States*, 262 U.S. 489 (1923); *Farr v. Hain S.S.*, 121 F.2d 940 (C.A. 2, 1945); and *Blair v. United States*, 147 F.2d 840 (C.A. 8, 1941). In none of these cases was there the question of the materiality of a gross failure to pay. *Farr* and *Blair* stand for the proposition that where one of the parties decides to continue performance after a default which was not material it can still sue for damages, but even that fact-pattern is not present here.

or sold. There was, moreover, no other market for the helium Northern Helix was producing. Any one of the four conservation contractors generated enough to satisfy the current demand. Northern Helix alone among those companies had no purification and liquefaction operations. Nor had it developed marketing or storage facilities, since it anticipated selling only to the Government and, as a result of the lack of demand in the private sector at the end of the 60's, it did not appear economically feasible to make such an investment. The sum of it is that Northern Helix continued to tender helium to the Government because it had no other outlet or alternative use for the gas.

In addition, and this is another special aspect of the case before us, the action taken by Northern Helix was consistent with the purpose of the program, the conservation of a valuable national resource. In considering the Government's failure to observe the procedural requirements of the National Environmental Policy Act of 1969 when it terminated the contracts of the three other suppliers,<sup>4</sup> the Tenth Circuit characterized the termination as "an action which has environmental consequences, namely rapid depletion of the helium resources of the country." *National Helium Corp. v. Morton*, C.A. 10 No. 71-1369 (decided Oct. 4, 1971). The decision, requiring that the Secretary at least consider the environmental impact of his action, is predicated on the view expressed by Congress "that it is in the national interest to foster \* \* \* the development of supplies of helium \* \* \* sufficient to provide for

<sup>4</sup> Unlike plaintiff, those three companies did not file suit here and did not treat their contracts as discharged by the failure to pay. After the Interior Department terminated their agreements in January 1971 (as it did plaintiff's), they sued in a district court to enjoin the termination. The Tenth Circuit upheld the injunction on the ground that Interior had failed to comply with the conditions of the Environmental Policy Act before it ended performance.

essential government activities." Helium Act, 50 U.S.C. § 167m.

These are good reasons vindicating plaintiff's decision to continue performance, but defendant intimates that, in truth, Northern Helix did not actually act upon these considerations but, rather, treated non-payment as immaterial for many months, and then brought suit at the last minute, only when it thought that full payment was imminent and the contract was about to be ended by the Government under the termination provision. On the record before us, we are not impressed with this suggestion, which defendant supports by little more than suspicion. As early as June 24, 1970, plaintiffs sent a letter to the appropriate government official which explicitly said: "The failure of the Government to make payments due under the contract constitutes a material breach." Moreover, full payment was not assured when plaintiff brought suit in December 1970. A supplemental appropriation bill was going through Congress, but the legislative history reveals that, following critical reports by the General Accounting Office and loss of much of the federal market for helium, the conservation program lacked Congressional support at that time. The debate on the floor of the House of Representatives indicates that the Executive did not seek full and adequate funding in order to give Interior leverage to negotiate a reduced contract price: "To pay it [the amount owing] now will take their feet from the fire, and if payment is made they will not renegotiate. They can well wait for their money. I would urge that the pressures be kept on and their feet be kept to the fire \* \* \*" (Cong. Rec. Dec. 10, 1970, p. H11501, Cong. Hosmer.) By the time of suit, the supplemental appropriations bill had reached the conference committee, but there was still no guarantee that the bill would be enacted, and even if it were that Interior would pay Helix, rather than other companies with contracts under which interest could be collected. The amount appropriated was insufficient for all the outstanding debts under all the contracts and at the



same time to continue payments for the remainder of the fiscal year; as we have said, it was only enough to make the reduced payments under the contract modifications proposed by Interior which the companies had not yet accepted. Senate Hearings on H.R. 199281, Committee on Appropriations, 91st Cong., 2d Sess. p. 213.

We accept, then, as valid the reasons plaintiff gives for continuing performance despite the Government's material breach. These grounds sustain application here of the rule set forth in Section 1-207 of the Uniform Commercial Code:

A party who with explicit reservation of rights performs or promises performance or assents to performance in a manner demanded or offered by the other party does not thereby prejudice the rights reserved. Such words as "without prejudice," "under protest" or the like are sufficient.

Plaintiff's continued performance was founded on the required reservation. In its letter of June 24th, it wrote Interior that the failure of the Government to make payment "is a material default under the contract. We wish to reiterate that any performance rendered by Northern Helex Company subsequent to any such defaults has been and shall be with the express understanding that such action shall not constitute a waiver of any of Northern Helex Company's rights and remedies." On the same day, the company sent another letter, also stating that the Government's failure to pay constituted a material breach (item 3); that any negotiations undertaken with Interior were voluntary (items 6-8); and that such discussions "shall not constitute a waiver by Northern Helex of any of its rights or powers, whether existing by virtue of contract or not" (item 9). On June 26th, the Acting Chief of the Division of Helium of the Bureau of Mines acknowledged receipt of both letters.

The Code's official comment explains that Section 1-207 adds no new requirement of language of reservation not

already required "but merely provides a specific measure on which a party can rely as he makes or concurs in any interim adjustment in the course of performance." U.C.C. § 1-207 (comment 2). The defendant seizes upon language elsewhere in the comment that the provision applies not to the creation or loss of remedies in the ordinary course of performance "but rather to a method of procedure where one party is claiming as of right something which the other feels to be unwarranted." In this instance, plaintiff's reservation amounted to a method of procedure under which it would continue to perform. The section is not being invoked to create a remedy because a remedy for the seller, when the buyer breaches, already exists under the law (U.C.C. §§ 2-703, 2-704); plaintiff merely sought to preserve that relief by its explicit notification.

One remedy under the Code (§§ 2-703, 2-704), when the buyer's failure to pay amounts to a breach of the whole contract, empowers the wronged seller who has unidentified and unfinished goods in his possession, "in the exercise of reasonable commercial judgment for the purposes of avoiding loss and of effective realization either [to] complete the manufacture and wholly identify the goods to the contract or [to] cease manufacture and resell for scrap or salvage value or [to] proceed in any other reasonable manner." The official comment to § 2-703 says that the article "rejects any doctrine of election of remedy as a fundamental policy", and the comment to § 2-704 explains that "the seller is given express power to complete manufacture or procurement of the goods for the contract unless the exercise of reasonable commercial judgment as to the facts as they appear at the time he learns of the breach makes it clear that such action will result in a material increase in damages." The comment also puts the burden on the buyer to show the commercially unreasonable nature of the seller's action in completing manufacture.

It is plain from these provisions that, to determine whether waiver has occurred, a more complex inquiry must

be made than merely, "did performance continue?" The guiding principle is whether, in the individual circumstances, the seller exercised "reasonable commercial judgment" in continuing to manufacture and deliver, in the effort to mitigate damages, although his obligation to perform had been discharged by the buyer's total breach. See Hawkland, *A Transactional Guide to the Uniform Commercial Code*, Vol. 1, p. 280 (1964). What we have already said shows that, in our judgment, plaintiff was fully warranted in following the course it chose. It exercised "reasonable commercial judgment" in deciding to continue performance.

Under the traditional view, the innocent but aggrieved party may continue performance if he asserts that right, and also if assent is given by the other side. Williston, *Contracts, supra*, sec. 688; *Pasquel v. Owen*, 186 F. 2d 263, 271 (C.A. 8, 1950). We reject the contractor's point that in fact defendant consented to continued performance,<sup>5</sup> but adhere to the more modern position of the Uniform Commercial Code, in its Section 1-207, that the opponent's assent is not a prerequisite.<sup>6</sup> "As always, the federal contract law we apply should take account of the best in modern decision and discussion." *Padbloc Co. v. United States*, 161 Ct. Cl. 369, 377 (1963). This court has explicitly recognized the authority and relevance of the Uniform Commercial Code in the field of public contracts. *Everett Plywood & Door Corp. v. United States*, 190 Ct. Cl. 80, 89, 419 F. 2d 425, 430 (1969),

<sup>5</sup> Plaintiff relies on the Government's response to the Northern Helix letters of June 24th characterizing the non-payment as a material breach and stating that further performance would not be a waiver of that breach. In its entirety, this response was: "On behalf of Assistant Secretary Dole, thank you for the two letters you handed me on June 25. We appreciate having them." It is hard to divine assent in this routine acknowledgment.

<sup>6</sup> *Changes in the New York Law of Damages*, 31 Fordham L. Rev. 749, 752 (1963).

as has the Second Circuit, *United States v. Wegematic Corp.*, 360 F. 2d 674, 676 (C.A. 2, 1966) (Friendly, J.). See, also, *Harry Thuresson, Inc. v. United States*, Ct. Cl. No. 198-70, decided this day.

We are convinced of the fairness of following the modern U.C.C. rule in this case because of the harshness of a contrary result on our special facts, where cessation of production was commercially impossible and avoidance of waste most desirable. As Williston explains the rationale behind the strict doctrine of election of remedies (Williston, *Contracts, supra*, sec. 684), that theory has little impact here. He says: "The law simply does not, under the circumstances, permit a party to exercise two alternative or inconsistent rights or remedies." In this instance, continued delivery was not an inconsistent, voluntarily chosen, course of action, but an indispensable route which was the only practicable one. The Government was not hurt and it did not change its position. It was certainly not misled into thinking that payment was immaterial to Northern Helix and that the latter would continue to perform regardless.<sup>7</sup> Nor did the Government count on the uninterrupted tender of helium; indeed, it terminated the contract a few months later. Similarly, there is no basis for believing that the defendant reasonably thought that the contractor had waived or abandoned its position that the breach was material and total.<sup>8</sup>

<sup>7</sup> This case is therefore different from *DeVito v. United States*, 188 Ct. Cl. 979, 413 F. 2d 1147 (1969), in which there was no reservation of rights and the contractor continued to work in reliance on the Government's failure to terminate.

<sup>8</sup> Even under the conventional view that assent is necessary, it is held that a party deciding to proceed with performance after breach may still change his mind if the other party has not changed his position in reliance. *Western Transmission Corp. v. Colorado Mainline, Inc.*, 376 F. 2d 470, 472 (C.A. 10, 1967).



The parties' own agreement bolsters the conclusion that plaintiff could continue to deliver without waiving the Government's breach. Article XVII provided: "No waiver by either party for any one or more defaults by the other in the performance of any provisions of this contract shall operate or be construed as a waiver of any future default or defaults, whether of a like or of a different character." This indicates that even an express waiver would be limited, and would operate only as to the particular defaults mentioned. Each successive non-payment would continue to be a breach. With this provision in the contract it is very hard to infer a continuing waiver by Northern Helex as the Government's debt to it waxed greater by the month; the opposite inference is the more reasonable. The same clause scotches any suggestion that plaintiff owed the defendant a warning before deciding to bring suit. Notice that non-payment was a material breach had already been given, and that was enough.

### III. Waiver after suit

The Government urges as another instance of waiver continued performance by Northern Helex after filing suit. Not only did the plaintiff tender helium, but it corrected errors in measurement and determined the exact volume of the helium-gas mixture. Such adherence to the letter of the contract does not, however, undercut plaintiff's position; on the contrary, the performance which continued and which required formation of a storage contract with the Government lends support to the contractor's assertions of inability to stop production, of lack of facilities to store helium, and of the absence of alternative means of disposal. Those circumstances were all indicated above as the reasons why, in this case, continuation of performance reasonably served to mitigate damages. Moreover, accurate record-keeping and measuring was essential to the identification of helium with the contract pursuant to U.C.C. § 2-704(2), one remedy afforded Northern Helex by the Code.

The Government points, too, to the cashing of the check sent by the defendant on January 14, 1971 to cover all money then owing, as mooted or waiving the cause of action. Neither of the cases it cites (*Routed Thru-Pac, Inc. v. United States*, 185 Ct. Cl. 428, 440, 401 F. 2d 789, 796 (1968), and *Early & Daniel Co. v. United States*, 271 U.S. 140 (1926)) is pertinent. In *Routed Thru-Pac*, the entire amount of the defendant's counterclaim was tendered by the plaintiff; the check was then accepted and deposited. In our case, there was no payment in full of the entire amount claimed as a result of total breach, about ninety million dollars. In *Early & Daniel Company*, the two parties disputed the Government's call for more hay than the contract required; following delivery under protest, plaintiff accepted the Government's tender of the contract price and was thereby held to have waived its right to a higher price. That case likewise differs in that the total contract price was paid to the contractor and accepted by him; here, we have only partial payment, expressly accepted by way of mitigation of damages.

We find more persuasive the decisions indicating that, where the Government knows of the contractor's intention not to relinquish his right to full payment, the acceptance of partial payment, even without notation on the check, does not waive his claim. In one case, although the contractor had signed a voucher which stated that payment represents "complete and final settlement," there was no waiver because there were timely protests. *Inland Trucking Corp. v. United States*, 150 Ct. Cl. 642, 281 F. 2d 457 (1960). We have held, too, that when a certain sum is due acceptance of part payment will not deprive the claimant of his right to sue unless acceptance of the lesser sum was by way of accord and satisfaction. *Finney v. United States*, 32 Ct. Cl. 546 (1897). Even where the Comptroller General notified a claimant that he should not accept payment of the amount allowed if he desired review of the settlement, the plaintiff could sue for the balance alleged to be due

because he advised the Government that he accepted the sum tendered as part payment only, and reserved the right to litigate for the remainder. *Benedict v. United States*, 66 Ct. Cl. 437 (1928). Waiver of delay damages was held not appropriate where acceptance of late payments was not the cause of continued tardiness by the defendant in making payments. *Sanborn v. United States*, 46 Ct. Cl. 254 (1911). These cases show that a critical factor in the court's refusal to find estoppel is the reservation of rights, express or implied. See *Luria Brothers & Co. v. United States*, 177 Ct. Cl. 676, 369 F. 2d 701 (1966).

Here, the Government makes no argument that it was misled by the cashing of the check or ignorant of plaintiff's vigorous prosecution of this suit. Indeed, after the filing of suit on December 24, 1970 every billing statement (except for one inadvertent omission over a one-week period) contained the legend: "Delivery of helium, submission of these documents, and payment shall be without prejudice to the rights and obligations of the parties." After the large payment on January 22, 1971, Northern Helex amended its petition to reflect its receipt of the Government's check. Again, on June 10, 1971 plaintiff wrote that it would consider further payments "as a reduction of damages and to be without prejudice to the rights of the parties in the pending Court of Claims case." Accordingly, another check for \$2,285,872.87 was received on June 23rd and accepted. The whole pattern of plaintiff's conduct demonstrates that it has consistently continued to reserve its rights. We think it had the privilege to accept payment with such reservations, especially since interest could not be collected for further delay. There has therefore been no waiver of defendant's breach. See Anderson, *Uniform Commercial Code*, p. 285, § 2-612:16 (1971).

#### IV. Conclusion

For these reasons, we hold that the Government's breach (through non-payment) was material and total, justifying

the contractor in considering the contract at an end, and that Northern Helex has not waived that breach.<sup>9</sup> We stress, however, at the end of this opinion as we did at the outset, that we in no way pass upon plaintiff's claim to damages, full or partial, for this breach. This reservation includes the question, among others, whether the Government's termination of the contract in January 1971 would have been valid under the termination provision if the contract had remained in effect. All those issues relating to damages are not before us and we leave them entirely open, without intimating any opinion or tendency. Whether plaintiff's present victory will be real or Pyrrhic still remains to be litigated.

The plaintiff's motion for summary judgment is granted and the defendant's is denied. The amount of recovery, if any, will be determined in further proceedings under Rule 131(c).

<sup>9</sup> As a result of our finding of material breach due to nonpayment, we need not, and do not, pass on the two other grounds put forward by the plaintiff in its petition:—breach by anticipatory repudiation and breach of the implied obligation to preserve the federal market.



## IN THE UNITED STATES COURT OF CLAIMS

No. 454-70

NORTHERN HELEX COMPANY

v.

THE UNITED STATES

Before COWEN, *Chief Judge*, DURFEE, *Senior Judge*, SKELTON, NICHOLS and KUNZIG, *Judges*.

## Order

This case comes before the court on plaintiff's motion, filed November 21, 1975, [pursuant to Rules 7(d) and 151 (b)], for rehearing and oral argument before the full court. Upon consideration thereof, together with defendant's response in opposition thereto and plaintiff's reply, without oral argument by the active Judges of the court listed above (*Judges* DAVIS, KASHIWA and BENNETT not participating in any respect with regard to said motion) as to the suggestion for reargument before the full court [under Rule 7(d)], which suggestion is denied, and further having been so considered by the Judges listed above as to the motion for rehearing [under Rule 151(b)],

IT IS ORDERED that plaintiff's said motion for rehearing and reargument is denied.

BY THE COURT

/s/ WILSON COWEN  
*Chief Judge*

[Jan. 9, 1976]

## IN THE UNITED STATES COURT OF CLAIMS

No. 454-70

NORTHERN HELEX COMPANY

v.

THE UNITED STATES

Before COWEN, *Chief Judge*, DAVIS, SKELTON and NICHOLS, *Judges*.

## Order

This case comes before the court on plaintiff's motion, filed September 12, 1972, to mitigate damages and conserve helium and has been considered, together with defendant's reply and plaintiff's response, without oral argument.

Insofar as plaintiff's motion seeks to bring about the mitigation of damages, the court sees no need to compel defendant, against its will, to take that course; if the defendant voluntarily elects not to mitigate damages, any financial detriment it may ultimately suffer will be of its own choosing. On the other hand, plaintiff's interests, to the extent it prevails with respect to damages and recovers monetary judgment, will be fully protected by the judgment, and will not be harmed by the failure of the defendant to continue to receive and store helium. To the extent that plaintiff may not prevail with respect to damages, the court sees no adequate reason, appropriate to this case and within its powers, to compel defendant to continue to receive and store helium for plaintiff's benefit (as non-prevailing party) since plaintiff's own papers (see especially pp. 3-5 of "Plaintiff's Response to Defendant's Reply to Plaintiff's Motion to Mitigate Damages and Conserve Helium", filed Sept. 26, 1972) indicate that plaintiff has decided that there is "no business justification for it to store any more helium for the short term or any helium at all for the long term."

The issue thus resolves itself into one solely of the need to continue the storage of helium for general purposes of conservation. That is a very important matter but not one upon the basis of which the court is authorized to enter a compulsory order where, as here, it is not necessary or appropriate for the particular case before us which involves only a monetary claim by the plaintiff for breach of contract. Public Law 92-415, 86 Stat. 652, together with the law existing prior to that statute, does not empower this court to enter such a specific mandatory order solely on grounds of conservation, no matter how great those needs may be.

IT IS THEREFORE ORDERED that plaintiff's said motion be and the same is denied.

BY THE COURT

/s/ WILSON COWEN  
*Chief Judge*

[Sep. 27, 1972]